ORDER NO. KM49012442A3

Service Manual

TELEPHONE ANSWERING SYSTEM WITH FACSIMILE

and Technical Guide

KX-F90B

Please use this manual together with the service manual for model No. KX-F90, order No. KM49009277C1.
This Service Manual indicates the main differences between; Original KX-F90 and KX-F90B.

■ SPECIFICATIONS

4. General

Power Supply: AC 120 V, 60 Hz (Model KX-F90) ➡ AC 220–240 V, 50 Hz (Model KX-F90B)

■ PARTS COMPARISON TABLE

Ref. No.	Part No. KX-F90 (Original)	Part No. KX-F90B	Part Name & Description	Pcs/ Set	Remarks
Cabinet, Mechanical and Electrical Parts					
6	PQQT5150Z	**PQQT5166Z**	Indication Label	1	
16	PQBCX169Z	**PQBCX169Y**	Button, FINE/LIGHT/POLLING/RECE.	1	
27	PQJS19S30Y	**PQJS19S30X**	Connector, 19P	1	
31	PQQT9529Z	----------	Label, #800 Call	0	Deletion
48	PQHR5289Z	**PQHR5289Y**	Reading Plate	1	
60	PQKM195W	**PQKM195V**	Cabinet Body, Handset Cradle	1	
67	PQJX2PM409Z	**PQJX2PM413Y**	Handset Ass'y	1	
101	PQHR9418Z	**PQHR9418Y**	Lock Lever, Right	1	
107	PQHR9425Z	**PQHR9425Y**	Spacer, Separation Roller	2	
115	PQYFF90M	**PQYFF90BX**	Lower Cabinet Ass'y	1	
121	PQZSF50M	**PQUS227X**	Spring, Sub Roller-B M'tg	1	
124	PQJM120Z	**PQJM124Z**	Microphone	1	
135	PQHM126Z	**PQHM126Y**	Paper Guide, Upper	1	
Accessories and Packing Materials					
A1	PQJA59Y	**PQJA59V**	Cord, TEL.	1	
A2	PQJA200Z	**PQJA223Z**	Cord, Power	1	⚠
A3	PQJA30V	**PQJA212V**	Cord, Handset	1	S
A4	RT-N30-JT1P	**RT-N60-JT1P**	Micro Cassette Tape	1	
A6	PQQX6915Z	**PQQX6392Z**	Instruction Book	1	
A10	PQQX9635Z	----------	Instruction Book (Quick Reference) (Spanish)	0	Deletion
P1	PQPK1052Z	**PQPK1343Z**	Gift Box	1	
Digiatal Board Parts					
R212	ERD21TJ560	**PQ4R10XJ560**	Resistor, 56Ω	1	
CN14	PQJP2D70Z	**PQJP2D70Y**	Connector, 2P	1	
Analog Board Parts					
PCB2	PQWP2F50M	**PQWP2F50BX**	Analog Board Assembly (NLA)	1	
IC6,7	PQVITM41256A	**PQVITM41256A or PQVIHD89711P**	IC	2	
C41	PQCUV1E104MD	**PQCUV1H103KB**	Capacitor, 0.01µF	1	
C135-137, 157	ECQP1H682GZ	**ECQG1H682JZ**	Capcitor, 0.0068µF	4	
C202	———	**PQCUV1E333MD**	Capacitor, 0.033µF	1	Addition
C304	PQCUV1H680JC	**PQCUV1H331JC**	Capacitor, 330P	1	
R14	PQ4R10XJ683	**PQ4R10XJ153**	Resistor, 15kΩ	1	
R29	PQ4R10XJ274	**PQ4R10XJ823**	Resistor, 82kΩ	1	
R200	———	**PQ4R10XJ103**	Resistor, 10kΩ	1	Addition

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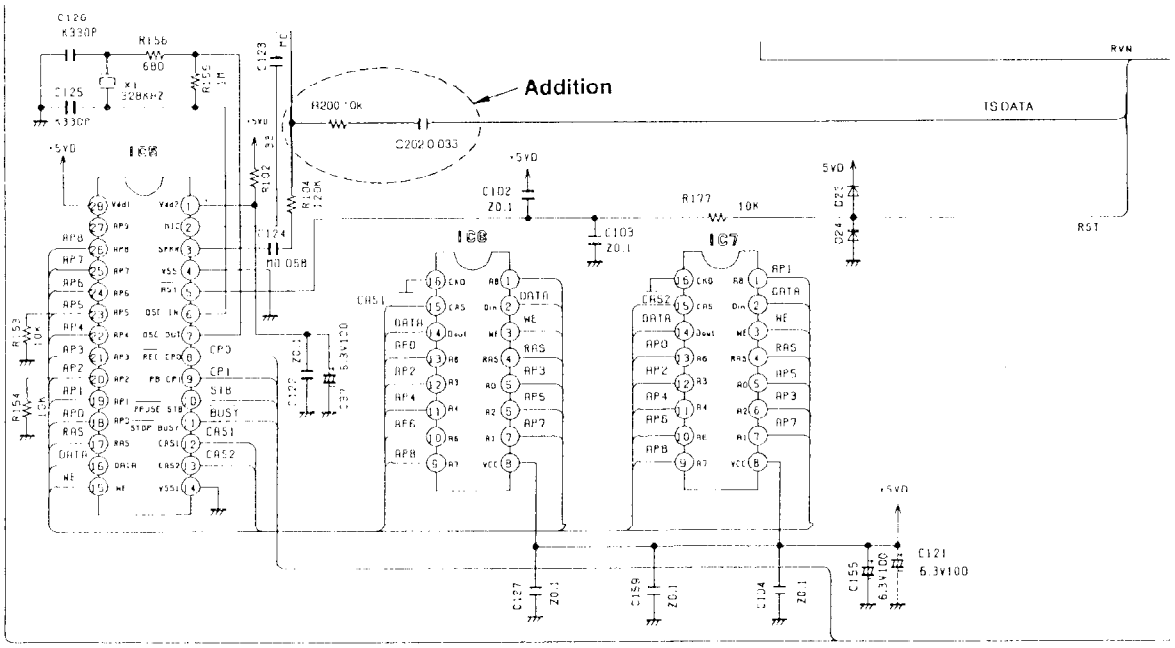
Ref. No.	Part No. KX-F90 (Original)	Part No. KX-F90B	Part Name & Description	Pcs/ Set	Remarks
Operation and Sensor Board Parts					
LED604	LN086WP38	**LN28RPXTA3**	LED	1	
R610	ERD25TJ222	**PQ4R10XJ222**	Resistor, 2.2kΩ	1	
R629	ERDS2TJ331	**ERDS2TJ151**	Resistor, 150Ω	1	
S611,612,629,630 ,632-635,637 ,638,640-643	PQSH1A33Z	**PQSH1A43Z**	Switch	14	
Switching Power Supply Board Parts					
PCB5	PQLP017Z	**PQLP017BX**	Switching Power Supply Board (NLA)	1	
Q403	2SD1266P	**2SD1266**	Transistor (Si)	1	
Q405	2SK1488	**2SK1357**	Transistor (Si)	1	⚠
D401	PQVDD5SBA40S	**PQVDD5SBA60S**	Diode (Si)	1	⚠
F401	XBA1C50NU100	**XBA2C31TR0**	Fuse (250V, 3.15A)	1	⚠
T401	ETS33K336V	**ETS33K346V**	Switching Transformer	1	
C401,404	ECQU1A104MH	**ECQU2A104MN**	Capacitor, 0.1μF	2	⚠
C405,406	PQVDSR471KD	**PQVDSR681KD**	Varistor	2	⚠
C440	ECKZRS102ME	**ECKDRS471MB**	Capacitor, 470p	1	
C451	EC0S2DG561M	**EC0GU2G181M**	Capacitor, 180p	1	
C458	ECKD3A221KBN	----------	Capacitor, 220p	1	Deletion
R435,436	ERDS1TJ154	**ERDS1TJ394**	Resistor, 390kΩ	2	⚠
R454	ERG3SJ104	**ERG3SJ184U**	Resistor, 180kΩ	1	
R458,463	ERG3SJ470	----------	Resistor, 47Ω	2	Deletion
R459	ERX3SJR10	**ERX3SJR22U**	Resistor, 0.22Ω	1	
R460	ERDS2TJ331	**ERDS2TJ101**	Resistor, 100Ω	1	
R480	ERDS2TJ273	**ERDS2TJ183**	Resistor, 18kΩ	1	

■ SCHEMATIC DIAGRAM



(Model KX-F90B)

■ PRINTED CIRCUIT BOARD (OPERATION BOARD)

(Model KX-F90) (Model KX-F90B)

I Ⓕ KXF90BX
Printed in Japan

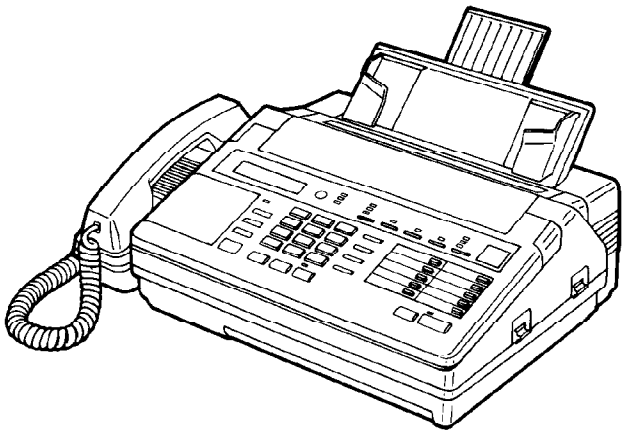
ORDER NO. KM49009277C1
F7

Service Manual

and Technical Guide

TELEPHONE ANSWERING SYSTEM WITH FACSIMILE

KX-F90



SPECIFICATIONS/ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ
TROUBLESHOOTING GUIDE/НЕИСПРАВНОСТИ И МЕТОДЫ ИХ УСТРАНЕНИЯ
DISASSEMBLY INSTRUCTIONS/ПОРЯДОК РАЗБОРКИ
ADJUSTMENTS/РЕГУЛИРОВКИ
BLOCK DIAGRAM/БЛОК-СХЕМА
DOCUMENT AND RECORDING PAPER FEED MECHANISM SECTION AND SENSOR SECTION/
СЕКЦИЯ ПРОТЯЖКИ БУМАГИ И СЕКЦИЯ ДАТЧИКОВ
IC BLOCK DIAGRAM/БЛОК-СХЕМА МИКРОСХЕМ
SCHEMATIC DIAGRAM/ПРИНЦИПИАЛЬНАЯ СХЕМА
TERMINAL GUIDE OF IC`S, TRANSISTORS AND DIODES/ЦОКОЛЕВКА МИКРОСХЕМ, ТРАНЗИСТОРОВ И ДИОДОВ
CONNECTOR LEAD AND EXTENSION CORD CONNECTING METHOD/РАСПОЛОЖЕНИЕ РАЗЪЕМОВ И МЕТОД ПОДКЛЮЧЕНИЯ ШТАТНЫХ И СЕРВИСНЫХ КАБЕЛЕЙ
CABINET, MECHANICAL AND ELECTRICAL PARTS LOCATION/РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА, МЕХАНИЧЕСКИХ И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ
CASSETTE DECK PARTS LOCATION/РАСПОЛОЖЕНИЕ ЧАСТЕЙ КАССЕТНОЙ ДЕКИ
ACCESSORIES AND PACKING MATERIALS/ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ
REPLACEMENT PARTS LIST/СПИСОК ЗАПАСНЫХ ЧАСТЕЙ

Panasonic

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SPECIFICATIONS

1. Integrated Telephone System (ITS) Section

Type:	K type handset, Single line ITS
	Push button type 12 key dial pad
Function:	Line monitor (Volume control type)
	10 stations automatic dialer (30 digits)
	Auto redial
	Combination dialing
	50 speed dialer
	Ringer control (3-steps control type)
	Pulse dialing or DTMF (Tone) Dialing

2. AutomaticTelephone Answering System (ATAS) Section

Type:	1 micro cassette automatic logic control mode
	Semiconductor record/playback mode OGM
	DTMF tone remote control
Function:	Remote turn on
	Message memo (Remote record/playback type)
	2 way record
	Call counter (Remote listening)
	Operation selectable 3 digits ID code
	CPC control
	TEL/FAX/ TAD/FAX selector

3. Facsimile Section

Type:	Desk top
Applicable Lines:	Public switched telephone network
Compatibility:	CCITT G3
Document Size:	MAX. 216 mm (8 1/2") in width, MAX. 600 mm (23 5/8") in length
Effective Scanning Width:	MAX. 208 mm (8 3/16")
Printing Paper Size:	216 mm (letter) x 30 m roll (8 1/2" x 98 ft roll)
Effective Printing Width:	208 mm (8 3/16")
Transmission Time*:	Approx. 30 sec/page (G3 Normal mode)
	Approx. 17 sec/page (Original mode)
Scanning Density:	Horizontal 8 pels/mm (203 pels/inch)
	Vertical 3.85 lines/mm (98 lines/inch)-Standard
	7.7 lines/mm (196 lines/inch)-Fine
	15.4 lines/mm (392 lines/inch)-Superfine
Image Sensor Type:	CCD image sensor
Printer Type:	Thermal printer
Data Compression System:	Modified Huffman (MH)
Modem Speed:	9600/7200/4800/2400 bps; Automatic fallback
Function:	10 stations automatic transmission
	Automatic document feeder (Max. 10 page), Polling

4. General

Power Supply:	AC 120V, 60Hz
Power Consumption:	Approx. 65W
	Battery 3V (Lithium Battery)...for Memory Backup
LCD:	16 digits
Speaker:	5 cm (1 31/32")PM dynamic
Microphone:	Condensor microphone (for OGM record)
Dimensions (H x W x D):	125 x 429 x 312 mm (4 29/32" x 16 7/8" x 9 9/32")
Weight:	5.5 kg (12.12 lbs)

***Transmission Time: Transmission times apply to text data using CCITT No. 1 test chart, between same machine models at maximum modem speed.**
Transmission times vary in actual usage.

Design and specifications are subject to change without notice.

TROUBLESHOOTING GUIDE

1. SERVICE HINTS

SYMPTOM	CURE
1. Defective general ATAS/ITS operation.	Defective solder of IC15 or check solder short.
1) Defective OGM record/playback.	Replace IC5 → IC6 → IC7.
2) Does not pull the plunger.	Replace Q27 and Q29.
3) Holds line constantly.	Replace Q6 and SA1.
4) ICM will not cut off.	Check R86, R124, C106 and C108.
5) Does not rewind.	Check Q22, Q23 and Q24.
6) Does not fast forward.	Check Q20.
2. Other defective operation.	Defective solder of IC2 or IC3, check short of solder. (Refer to pages 22 and 23.)

2. TEST MODE

Test Mode	Function	Operation
1. Printer Test	Print a test pattern and check the thermal head for abnormalities (missing dots, etc.) and also check the operation of the reception motor.	1. Press the PROGRAM button. 2. Press the #, 4 and 2 buttons. 3. Press the START button.
2. Motor Test	Rotate the transmission and reception motors to check the operation of the motors.	1. Press the PROGRAM button. 2. Press the #, 9, 0, 0, 0 and ✳ buttons. 3. Press the 5 and 6 buttons. 4. Press the START button. 5. Press the STOP/CLEAR button.
3. Modem Test	Send four kinds of FAX signals to check the sending function of the modem. 1) 462 Hz: Consecutive signal of PIS for tonal process. 2) 1100 Hz: Consecutive signal of EOM for tonal. 3) 2100 Hz: G2 carrier signal Consecutive of CED signal 4) G3, V29 training signal [modulation wave of carrier signal (1700 Hz)]	1. Press the PROGRAM button. 2. Press the #, 9, 0, 0, 0 and ✳ buttons. 3. Press the 5 and 4 buttons. 4. Press the START button. (every time press; 462 Hz→1100 Hz→2100 Hz→V29) 5. Press the STOP/CLEAR button.
4. Scanner Test	Turn on the LED lamp for document and operate the read system (there is no need to use paper). Observe the signals obtained to check the read system.	1. Press the PROGRAM button. 2. Press the #, 9, 0, 0, 0 and ✳ buttons. 3. Press the 5 and 5 buttons. 4. Press the START button. 5. Press the STOP/CLEAR button.
5. ROM Check	Check the ROM (IC4) by means of a check sum to see if the contents have been destroyed and also to check the version.	1. Press the PROGRAM button. 2. Press the #, 9, 0, 0, 0 and ✳ buttons. 3. Press the 5 and 1 buttons. 4. Press the START button.
6. RAM Check (Memory Clear)	The read and write operations of the RAMs (IC5, 6) can be checked to see whether or not the contents have been destroyed. **Note:** Before servicing, you must print the telephone and system list and keep the printouts as the memory will be cleared when the RAM is checked.	1. Press the PROGRAM button. 2. Press the #, 9, 0, 0, 0 and ✳ buttons. 3. Press the 5 and 0 buttons. 4. Press the START button.
7. LED test	Check the LED lights.	1. Press the PROGRAM button. 2. Press the #, 9, 0, 0, 0 and ✳ buttons. 3. Press the 5 and 7 buttons. 4. Press the START button.
8. LCD Test	Check the LCD indication.	1. Press the PROGRAM button. 2. Press the #, 9, 0, 0, 0 and ✳ buttons. 3. Press the 5 and 8 buttons. 4. Press the START button. 5. LCD indication; $\frac{AM}{PM}$888...8.

3. SERVICE FUNCTION TABLE

OPERATION:
1. Press the PROGRAM button.
2. Press the #, 9, 0, 0, 0 and ✳ buttons.
3. Input the code No.
4. Input the range (number).
5. Press the SET button.
   (An exception of code No. 50, 51, 54~57.)

Code	Function	Set Value	Effective Range	Default	Remarks
01	Pause time set	×100 ms.	000~600	050	
02	Flash time set	×10 ms.	01~99	70	
03	Dial speed select	1..10PPS 2..20PPS	1, 2	1	
10	VOX time select	1..6 seconds 2..4 seconds	1, 2	1	
20	CED frequency select	1..2100 Hz 2..1100 Hz	1, 2	1	
21	International mode select	1..On 2..Off	1, 2	1	
22	Auto recovery select	1..On 2..Off	1, 2	1	
23	Receive equalizer select	1..0.0 Km 2..1.8 Km 3..3.6 Km 4..7.2Km	1~4	2	
24	Transmit equalizer select	1..0.0 Km 2..1.8 Km 3..3.6 Km 4..7.2Km	1~4	2	
50	Memory clear (Refer to page 13.) Returns the set values of #1~#34 (#30~#34: user selectable) to default.				"START/COPY" input
51	ROM check (Refer to page 13.)				"START/COPY" input
52	DTMF single tone transmit select	1...On 2..Off	1, 2	2	Refer to page 15.
53	Monitor on FAX communication select	1..all phases 2..phase B 3..Off	1~3	3	
54	Modem test (Refer to page 13.)				"START/COPY" input
55	Scanner test (Refer to page 13.)				"START/COPY" input
56	Motor test (Refer to page 13.)				"START/COPY" input
57	LED test (Refer to page 13.)				"START/COPY" input
58	LCD test (Refer to page 13.)				"START/COPY" input
59	Paper jam detection select	1..On 2..Off	1, 2	1	
60	Cutter select	1..1 per page 2..2 per call 3..Off	1~3	1	
63	CCD position adjustment value set	×1 mm	−20~20	00	Press "*" for entering negative values.
70	BREAK % select	1..61% 2..67%	1, 2	1	
71	ITS auto redial time set	×number of times	00~99	14	
72	ITS auto redial line disconnection time set	× second	001~999	30	
73	Remote turn-on ring number set	×number of rings	00~99	15	

Code	Function	Set Value	Effective Range	Default	Remarks
80	TAM sequential tone detection select	1..On 2..Off	1, 2	1	
82	2-way recording select	1..Enable 2..Disable	1, 2	1	
83	2-way beep time set	×10 ms.	00~99	17	
84	Initial OGM reload select	1..On 2..Off	1, 2	1	
86	White line skip 1 select	1..On 2..Off	1, 2	1	
87	White line skip 2 select	1..On 2..Off	1, 2	1	
90	FAX auto redial time set	×number of times	00~99	05	
91	FAX auto redial line disconnection time set	×second	001~999	045	
92	CNG transmit select	1..auto/manual 2..auto 3..Off	1~3	1	
93	Time between CED and 300 bps	×10 ms.	006~999	008	
94	Overseas DIS detection select	1..detects at the 1st time 2..detects at the 2nd time	1, 2	1	
95	Receive error limit value set	×number of times	000~999	100	
96	Transmit level set	× dBm	−15~00	10	The values entered without "minus sign" will be regarded as negative.
97	Transmit speed fixed mode select	1..9600BPS 2..7200BPS 3..4800BPS 4..2400BPS 5..Off	1~5	5	
----	User setting list output				"START/COPY" input (If pressed down for more than 3 seconds, codes will also be output.)

DTMF single tone transmit select.
When set to ON (=1), the 12 keys and transmission frequencies are as shown.

Key	Frequency(Hz)	Key	Frequency(Hz)
"1"	697	"5"	1209
"2"	770	"6"	1366
"3"	852	"7"	1477
"4"	941		

When set to OFF (=2), the 12 keys and transmission frequencies are as shown.

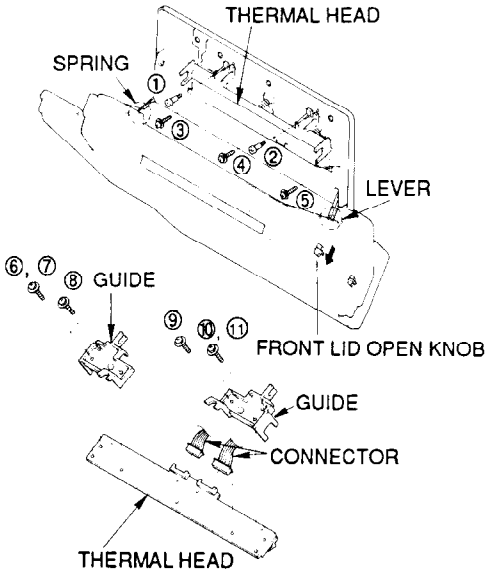
Low(Hz) \ High(Hz)	1209	1366	1477
697	"1"	"2"	"3"
770	"4"	"5"	"6"
852	"7"	"8"	"9"
941	"*"	"0"	"#"

DISASSEMBLY INSTRUCTIONS

Ref. No. 1	HOW TO REMOVE THE THERMAL HEAD

Procedure 1

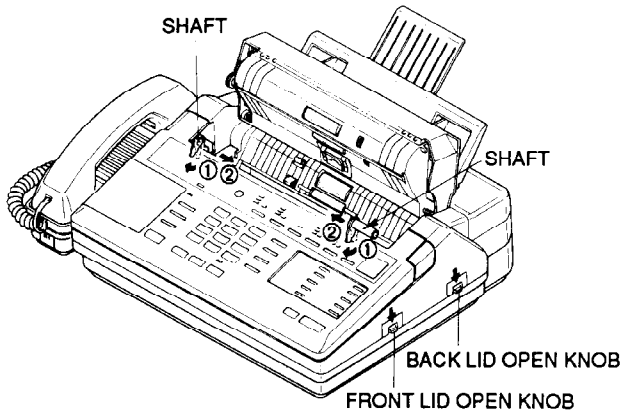
Fig. A

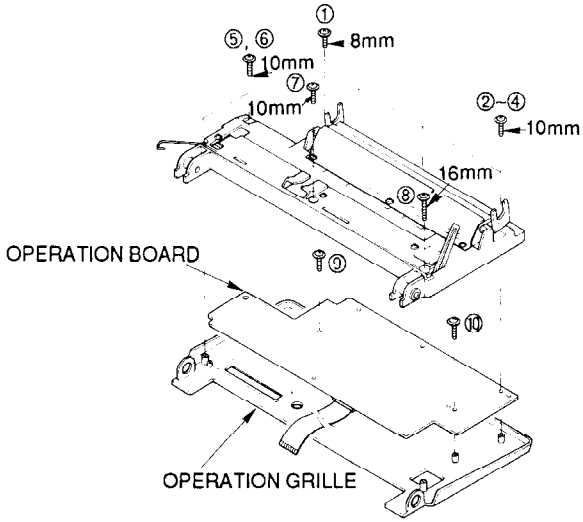


1. Push the front lid open knob.
2. Remove the 2 screws (①, ②).
3. Remove the 3 screws (③-⑤).
4. Remove the thermal head.
5. Remove the 6 screws (⑥-⑪).
6. Pull out the 2 connectors.
7. Remove the guide of the thermal head.
8. Exchange the thermal head.

Ref. No. 2	HOW TO REMOVE THE OPERATION GRILLE AND BOARD

Procedure 2

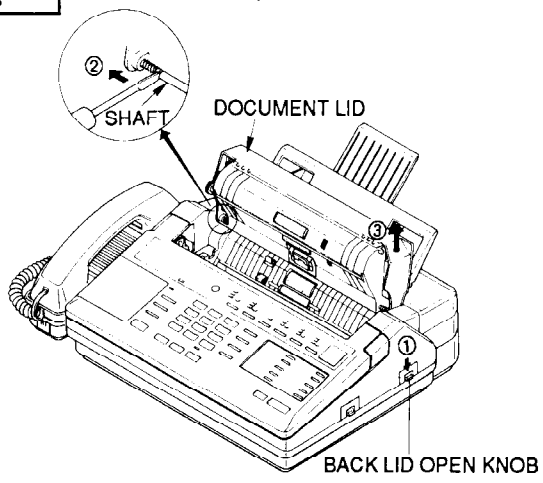


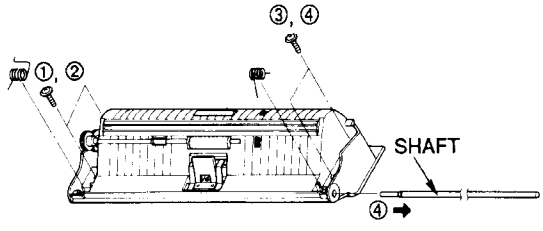


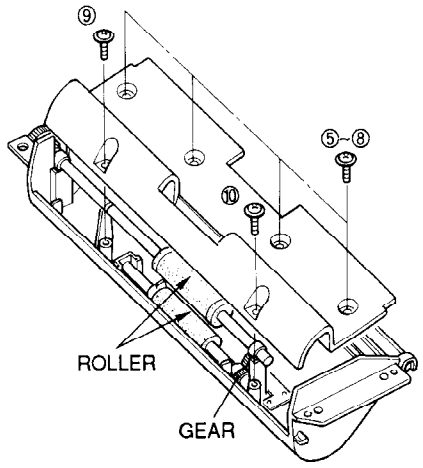
1. Push the back lid open knob.
2. Remove the 2 shafts.
3. Push the front lid open knob.
4. Remove the spring and lever. (See Fig. A).
5. Remove the 8 screws (①-⑧).
6. Remove the 2 screws (⑨, ⑩).
7. Remove the operation geille and board.

Ref. No. 3	HOW TO REMOVE THE DOCUMENT FEED ROLLERS

Procedure 3



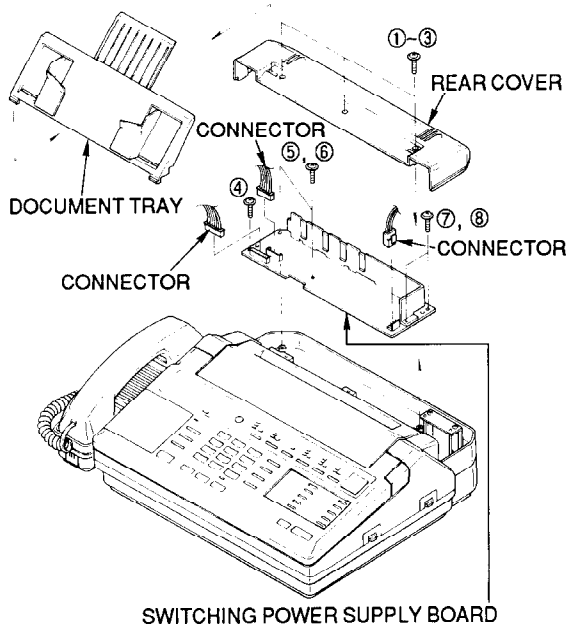




1. Open the back lid open knob.
2. Slide the shaft to the left and remove the document lid.
3. Remove the 4 screws (①-④).
4. Remove the 6 screws (⑤-⑩).
5. Exchange the rollers and gears.

Ref. No. 4	HOW TO REMOVE THE SWITCHING POWER SUPPLY BOARD

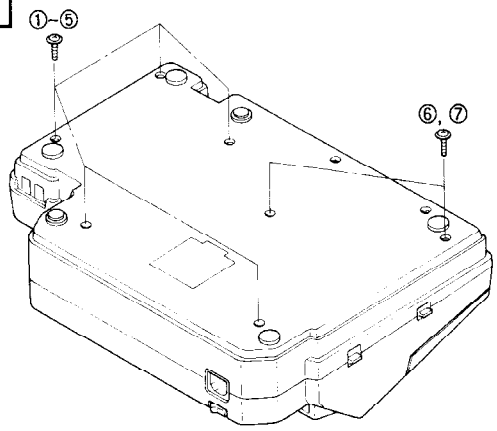
Procedure 4



1. Remove the document tray.
2. Remove the 3 screws (①-③).
3. Remove the rear cover.
4. Remove the 5 screws (④-⑧).
5. Pull out the 3 connectors.
6. Remove the switching power supply board.

Ref. No. 5	HOW TO REMOVE THE LOWER CABINET

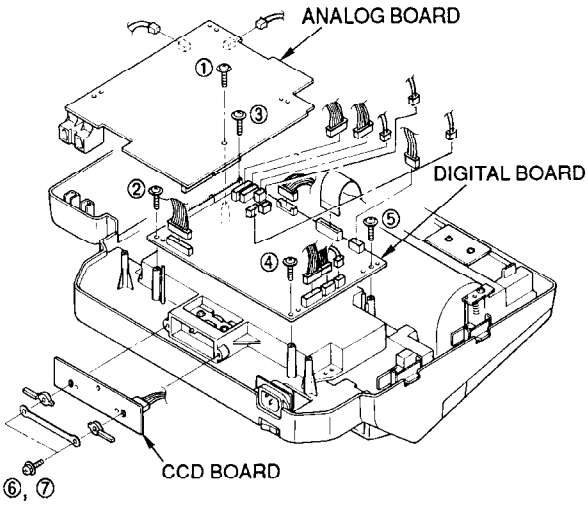
Procedure 5



1. Remove the 7 screws (①-⑦).
2. Remove the lower cabinet.

Ref. No. 6	HOW TO REMOVE THE ANALOG, DIGITAL AND CCD BOARDS

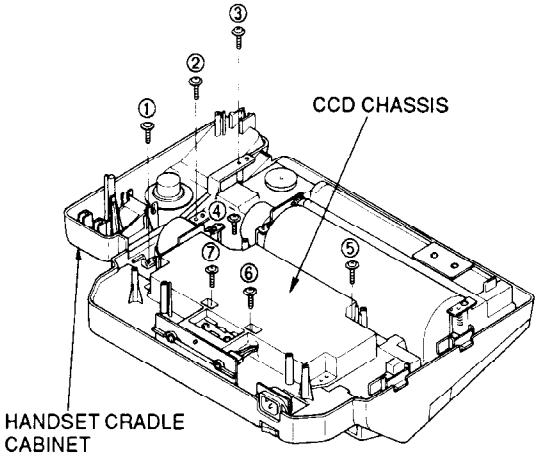
Procedure 5→6

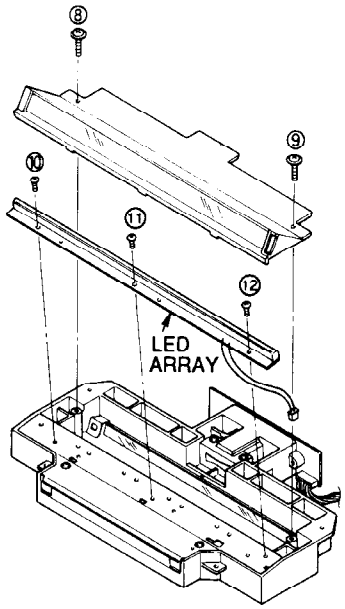


(ANALOG & DIGITAL BOARDS)
1. Remove the 2 connectors.
2. Remove the screws (①).
3. Remove the analog board.
4. Pull out the 12 connectors.
5. Remove the 4 screws (②-⑤).
6. Remove the digital board.

(CCD BOARD)
1. Remove the 2 screws (⑥-⑦).
2. Remove the CCD board.
3. CCD adjustment. (See page 52.)

Ref. No. 7	HOW TO REMOVE THE HANDSET CRADLE CABINET AND LED ARRAY
Procedure 5→6→7	

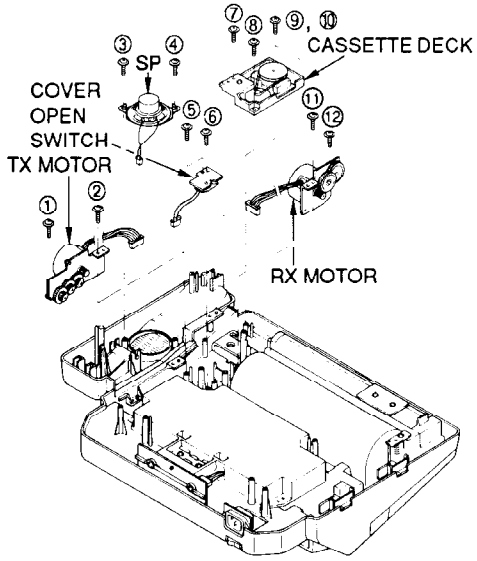




(HANDSET CRADLE CABINET)
1. Remove the 3 screws (①-③).
2. Remove the handset cradle cabinet.

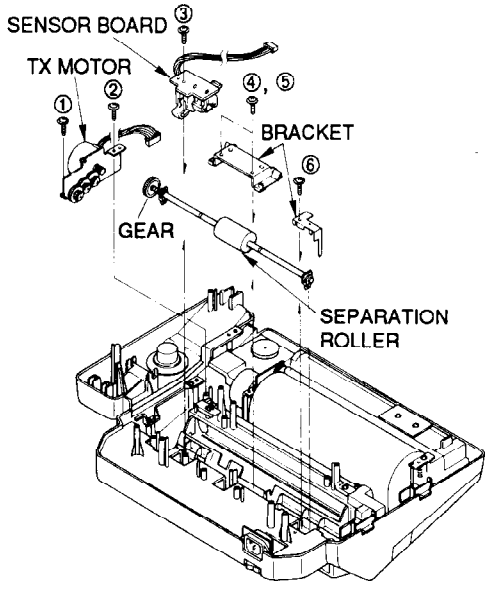
(LED ARRAY)
1. Remove the 4 screws (④-⑦).
2. Remove the CCD chassis.
3. Remove the 2 screws (⑧, ⑨).
4. Remove the 3 screws (⑩-⑫).
5. Exchange the LED array.

Ref. No. 8	HOW TO REMOVE THE MOTOR, SPEAKER, CASSETTE DECK AND COVER OPEN SWITCH
Procedure 5→6→8	



1. Remove the 12 screws (①-⑫).

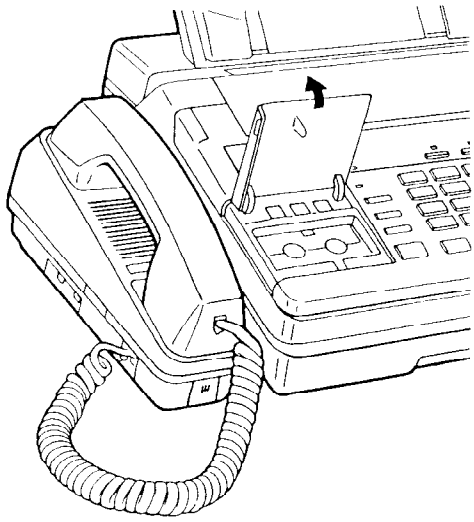
Ref. No. 9	HOW TO REMOVE THE SEPARATION ROLLER AND GEAR
Procedure 5→6→7→9	



1. Remove the 6 screws.
2. Remove the bracket, motor and sensor board.
3. Exchange the separation roller or gear.

Ref. No. 10	HOW TO REMOVE THE CASSETTE LID

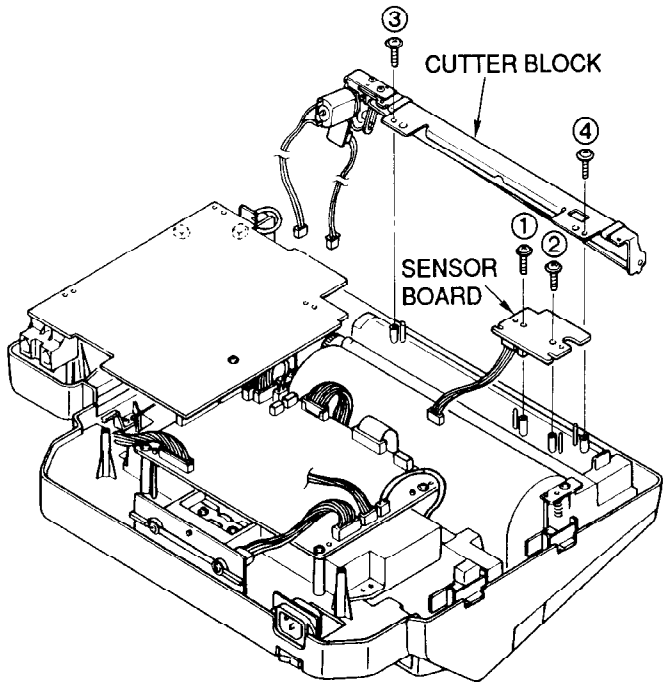
Procedure 10



1. When removing the cassette lid, pull out in direction of arrow.
2. To reassemble, reverse the above procedure.

Ref. No. 11	HOW TO REMOVE THE CUTTER BLOCK (CUTTER, MOTOR, CUTTER POSITION SWITCH)

Procedure 5→11



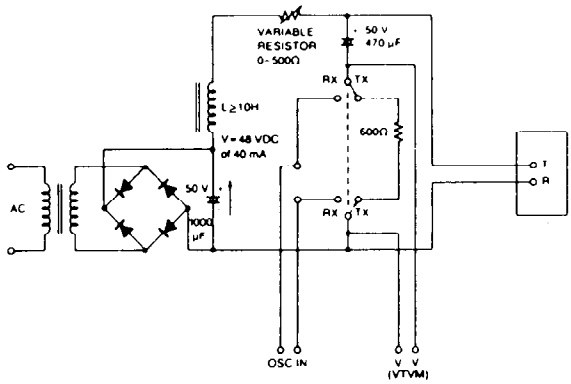
1. Remove the 2 screws (①, ②)
2. Remove the sensor board.
3. Remove the 2 screws (③, ④)
4. Remove the cutter block.

ADJUSTMENTS

1. TABLE OF TEST EQUIPMENTS AND JIG

No.	Test Equipment and Jig Name	Jig No.	Adjustment Name
1	VTVM	———	FAX Transmission Level Cassette Deck
2	Loop Simulator	———	FAX Transmission Level
3	Test Tape	QZZMWA	Cassette Deck
4	Oscilloscope	———	Cassette Deck CCD
5	Frequency Counter	———	Cassette Deck
6	CCD Jig	PQZZF50M	CCD

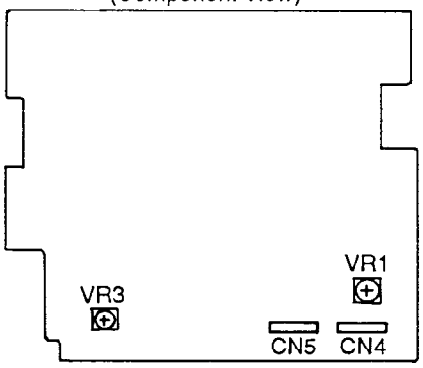
2. SCHEMATIC DIAGRAM OF LOOP SIMULATOR



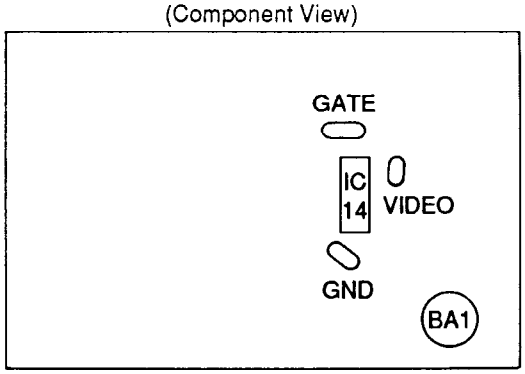
If a 48 V DC power supply is not available a 20V DC power supply can be substituted. However, the variable resistor (0–500Ω) must be set to 0 ohms.

3. LOCATION OF TEST POINT AND VR

ANALOG BOARD
(Component View)

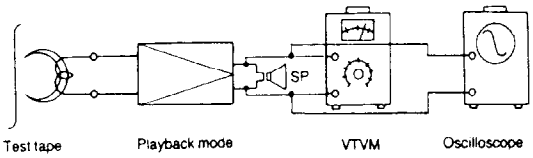
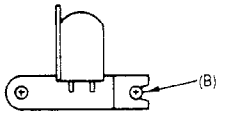
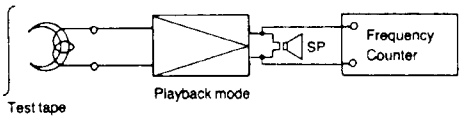


DIGITAL BOARD
(Component View)



4. CASSETTE DECK ADJUSTMENT

Notes: 1. Make sure the heads are clean.
2. Make sure the capstan and pressure roller are clean.
3. Room temperature for measuring and adjusting: 20±5°C (68±9°F)
4. Test equipments are not treated as replacement parts.

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
1. Head azimuth adjustment	1. Play back the test tape (QZZMWA). 2. Adjust screw (B) shown in Fig. A for maximum output at SP terminal. (Test equipment connection is shown below.)  	* Record/playback head  Fig. A
2. Tape speed adjustment	1. Play back the test tape (QZZMWA). 2. Adjust VR3 for 3000 ±50 Hz on frequency counter reading.  	

5. FACSIMILE TRANSMISSION LEVEL ADJUSTMENT

Perform the following adjustment after replacing FAX transmission system (IC1, T1 and VR1).

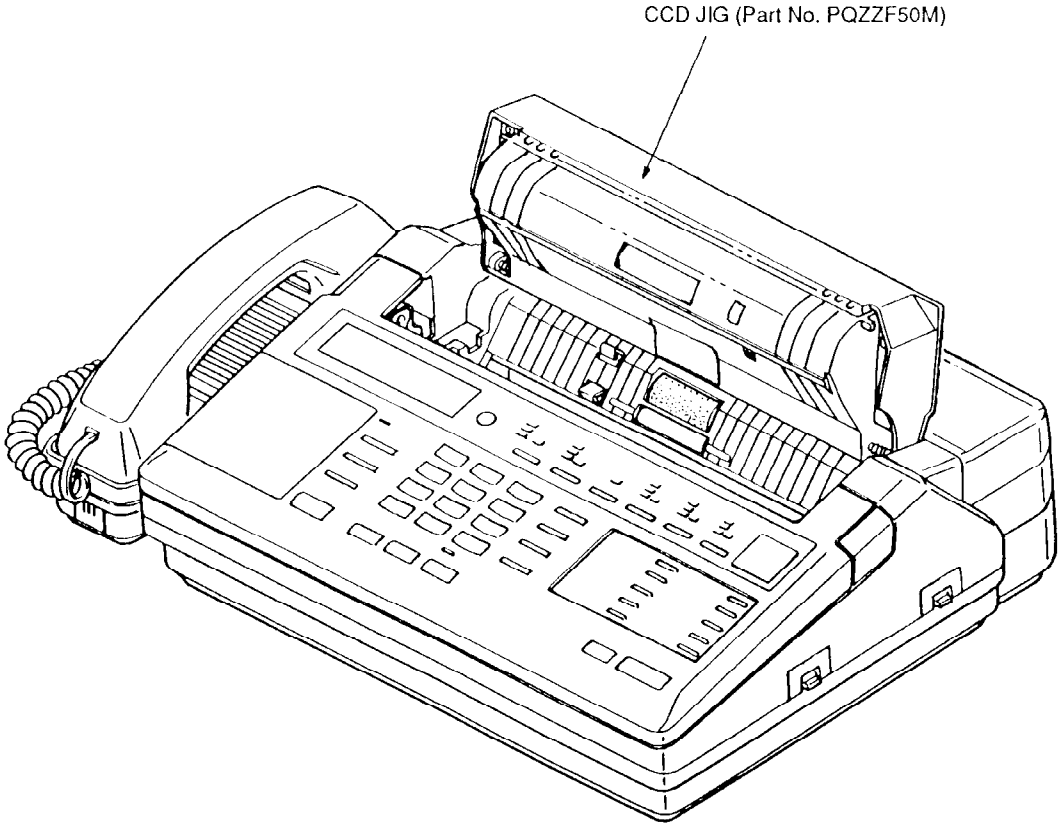
1) Connect the unit to loop simulator. (Set the selector switch to "TX".)
2) Power switch ON.
3) Press the PROGRAM button.
4) Press the #, 9, 0, 0, 0 and ✳ buttons.
5) Press the 5 and 4 buttons.
6) Press the START/COPY button.
7) Adjust VR1 for a reading of −10.5 ±0.5 dBm, on the VTVM.

6. CCD ADJUSTMENT

Perform the following adjustment after replacing lens and CCD board.

PREPARATION:

1) Remove the document lid [Refer to page 44 (Ref. No. 3)] and attach the CCD jig (PQZZF50M).
2) Oscilloscope connection as shown in the figure right.
3) Power switch ON.
4) Press the PROGRAM button.
5) Press the #, 9, 0, 0, 0 and ✳ buttons.
6) Press the 5 and 5 buttons.
7) Press the START/COPY button.



Notes:

1) When replacing the lens, pay attention to the markings on the lens are white, yellow or orange. The number of the CCD spacers to use differs depending on the markings as follows.
   *Two CCD spacers are provided with the lens.
   *Refer to page 142 for the location of the CCD spacers.

Marking on the lens	Number of CCD Spacer
Orange	0 (not used)
White	1
Yellow	2

2) Install the lens so that the making (White or Yellow or Orange) on it is upper side.
3) Do not touch the glass face of the lens with the bare hand.

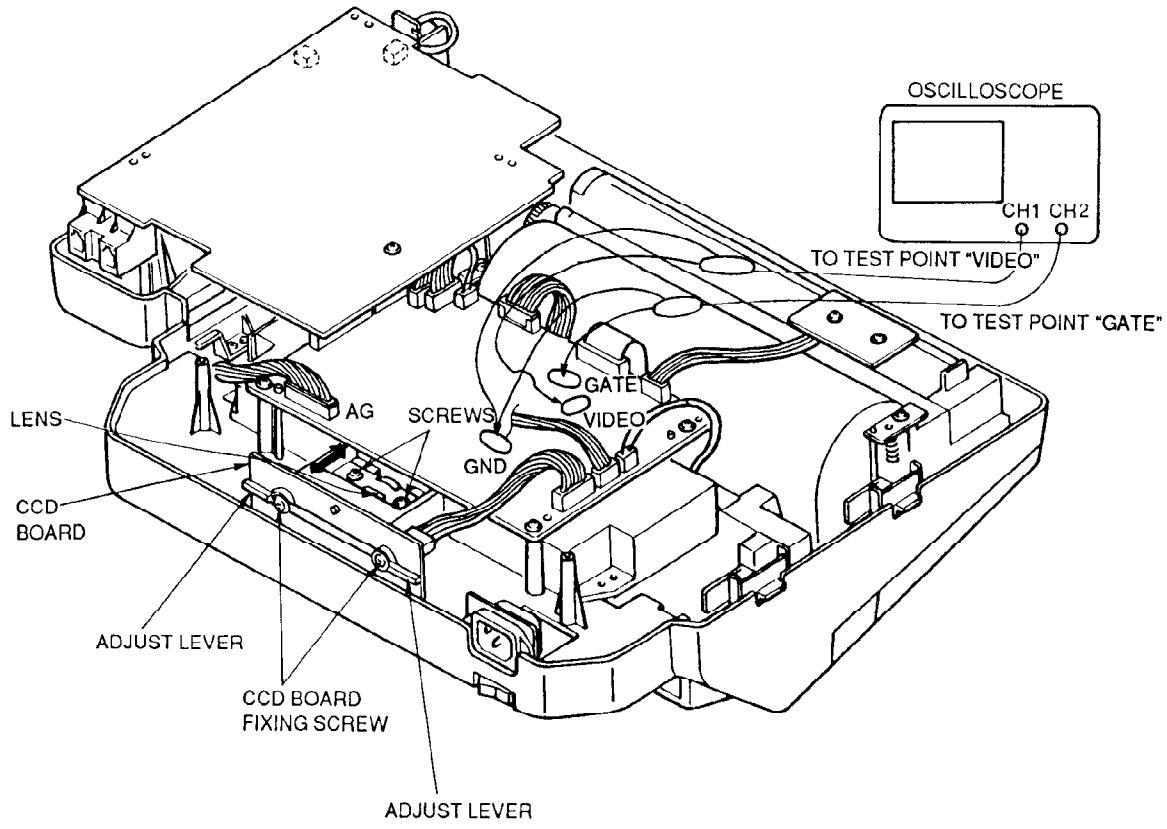
Cleaning:

If the lens is dirty, clean it with a dry soft cloth.

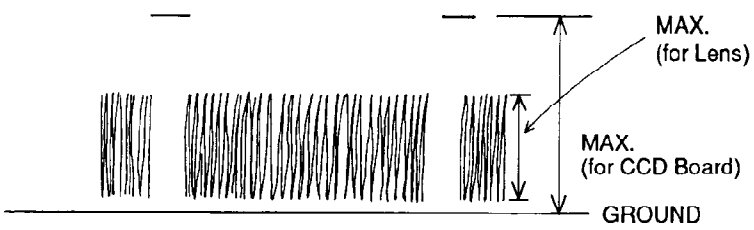
ADJUSTMENT:

LENS AND CCD READ POSITION ADJUSTMENT

1) Loosen the lens fixing screw and CCD board fixing screw.
2) Adjust the position of the lens and CCD board so that the waveform appears as shown in the figure below.
3) Fix the lens fixing screw and CCD board fixing screw.

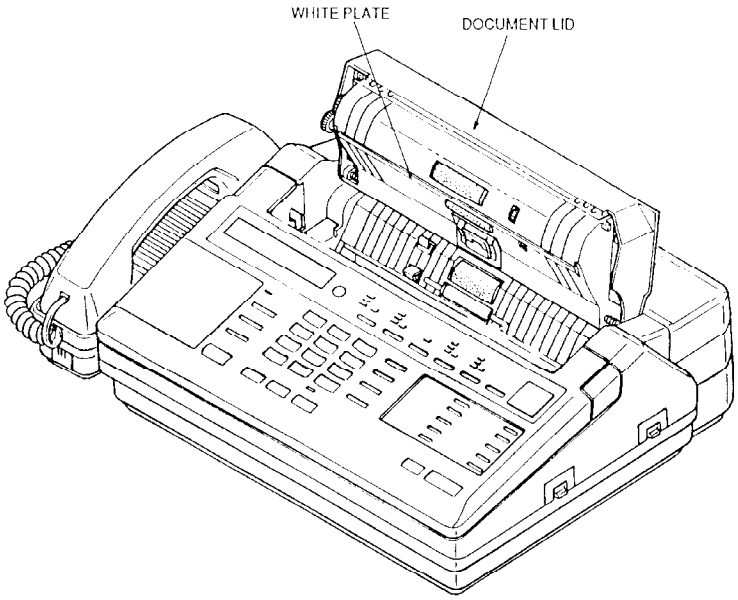


WAVEFORM



WHITE LEVEL ADJUSTMENT

1) Exchange the CCD jig (PQZZF50M) and document lid.
2) Adjust VR101 on the CCD board so that the waveform becomes **2 V.**



WAVEFORM

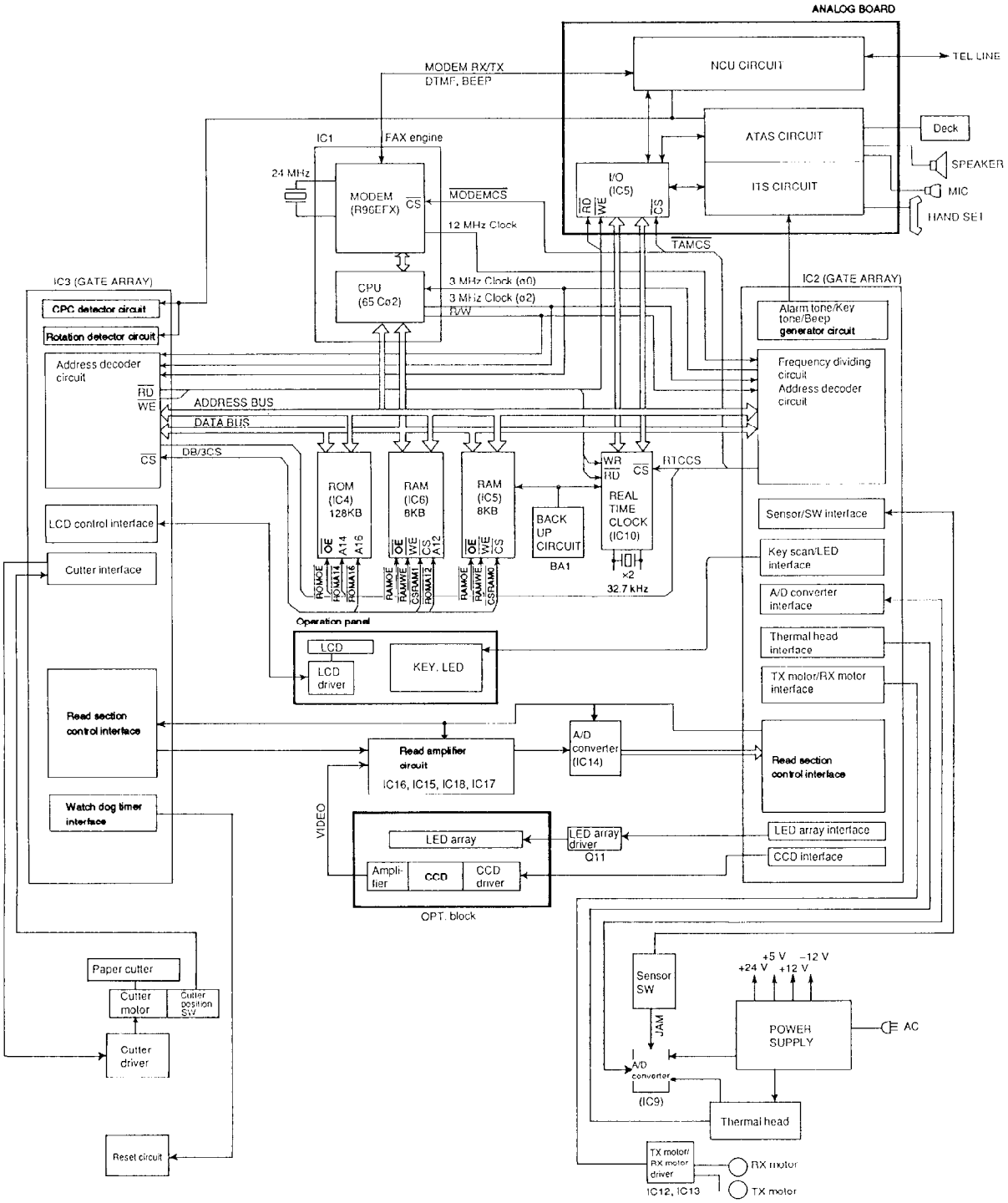
7. DOCUMENT READ START POSITION ADJUSTMENT

1) Power Switch ON.
2) Copy the document, and confirm the read start position of the document.
3) If get out of position, adjust the read position.
4) Press the PROGRAM button.
5) Press the #, 9, 0, 0, 0, * and 6 buttons.
6) Press the 3, □, □, SET and PROGRAM buttons.

20
: To move the image to the right direction
01 ↑
00 ← Standard (Default)
-01 ↓
: To move the image to the left direction
-20

* The starting position of the reading shifts 1 mm as the numbers changes.

Block Diagram



DOCUMENT AND RECORDING PAPER FEED MECHANISM SECTION AND SENSOR SECTION

1) Document and Recording Paper Feed Mechanism

[Document Path]

- When the document is aligned in the center, the maximum document width is 218 mm.
- The separation roller (2) and feed rollers (3), (4), (5) are driven by the stepping motor via gears, and rotate in the direction of the arrows as shown in the figure.

The paper feed sequence is described below.

(1) Insert the document along the document insertion guide on the tray. When the documents are placed into position, the document sensor (7) is turned on and a beep will sound so that the user knows the document is properly set.

(2) When the START button is pressed, the motor starts and the rollers start rotating.

(3) One sheet at a time is separated by the separation rubber (6) then sent to the separation roller (2) which rotates and then feeds the document into the unit. (Automated feeding operation)

(4) The read position sensor (8) is turned on when the document is fed.

(5) The document is fed to the CCD start reading position according to the ON data of the read position sensor (8).

(6) When the document reaches the CCD start reading position, the CCD starts reading.

(7) The document is fed when the document feeding and CCD reading are synchronized.

(8) When the document is completely fed and the read position sensor (8) is turned off, the CCD stops reading and the document is discharged by the feed roller (5).

(9) The next sheet separated by the separation roller is fed in.

[Recording Paper Path]

(1) The user inserts the edge of the recording paper into the paper guide for cutter, and close the panel to set the recording paper.

(2) When the operation panel is closed, the thermal platen (11) starts to rotate, and the recording paper is transported for a fixed distance.

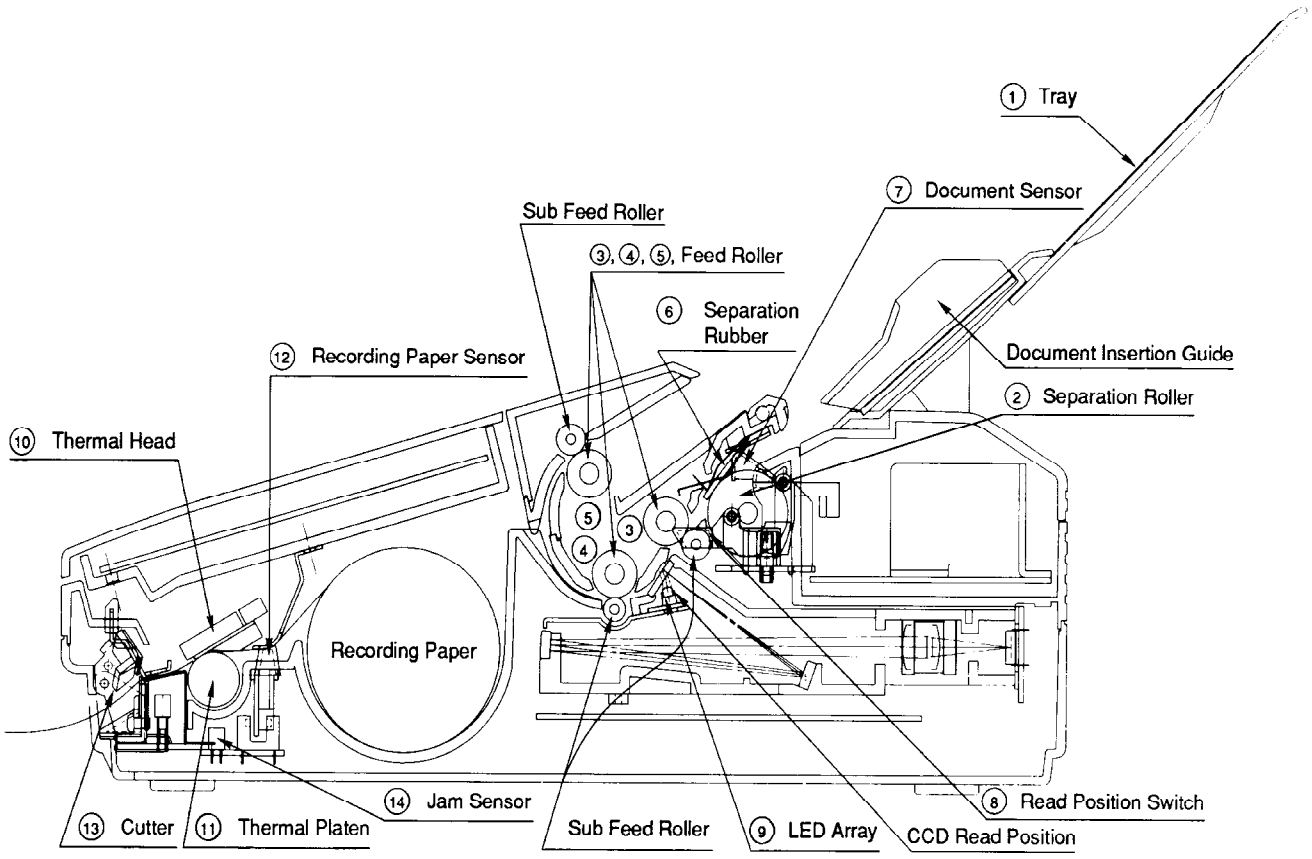
(3) The cutter (13) is driven to cut the recording paper to flush the edge, and the cutter is in the wait status.

(4) When the print command is received, the set transmits the printeing signal to the thermal head (10), and it prints on the recording paper.

(5) When printing is completed, the cutter (13) is moved to cut the recording paper.

(6) Paper jam in the cutter unit is detected by the jam sensor (14), and indicated on the LCD.

(7) When the recording paper runs out, the recording paper sensor (12) is turned off so as to warn the user.



[Driving operation of the cutter]

(1) The cutter is in the wait status with the cutter position switch OFF as shown in Fig. 1b.
(2) As the cutter driving gear is rotated by the motor, the cutter lever is moved as shown in Fig. 2b. At the same time, the cutter blade is lowered simultaneously with the cutter lever, and cutting starts. (Fig. 2a)
(The cutter position switch is ON.)
(3) The cutter driving gear keeps rotating, lowering the cutter blade further. The recording paper is cut accordingly. (Fig. 3a, 3b)
(The cutter position switch is ON.)
(4) The cutter driving gear keeps rotating, and the cutter blade moves back into the wait status. (Fig. 4a, 4b)
(The cutter position switch is ON.)
(5) When the cutter position switch is turned OFF, the cutting motor stops and the cutter is in the wait status.
*The cutter repeats the procedures (1) to (5).

Paper Jam:
In order to detect the paper jam in the cutter section, the jam sensor is installed under the paper guide for cutter.
It detects the paper jam according to the position of the reflector-type sensor.

(Cutter blade operation)

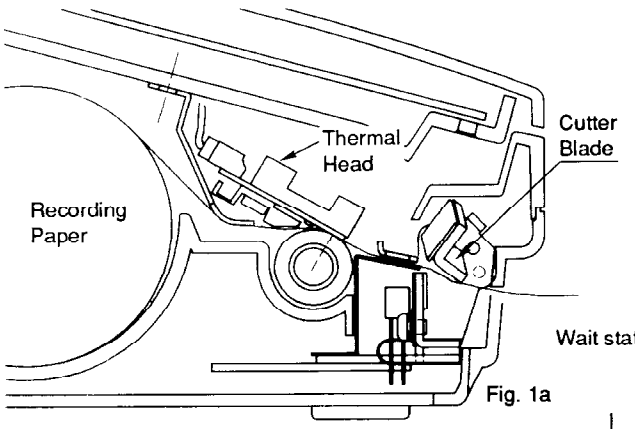


Fig. 1a

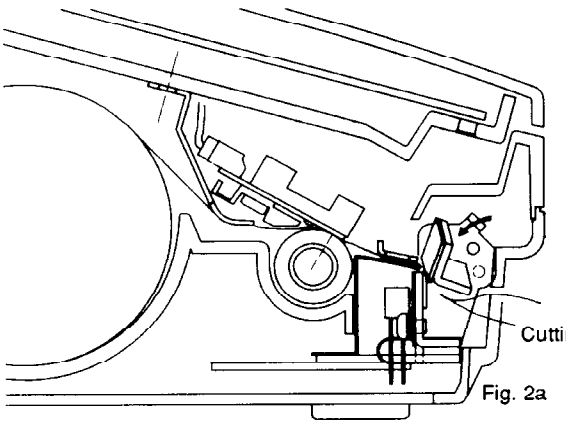


Fig. 2a

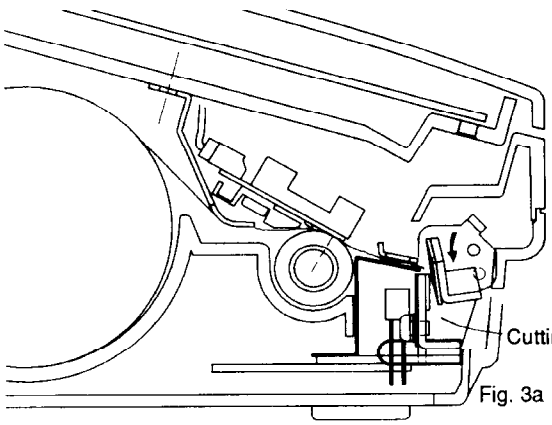


Fig. 3a

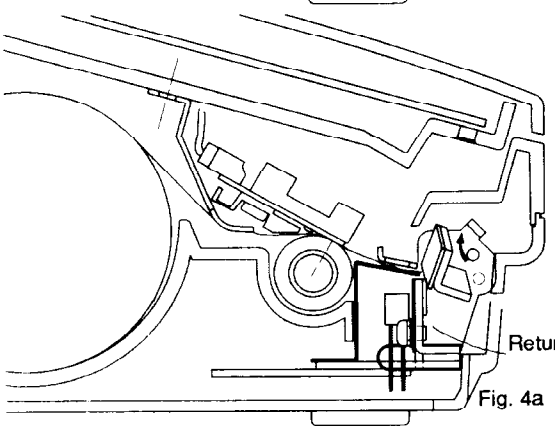


Fig. 4a

(Cutter driving gear operation)

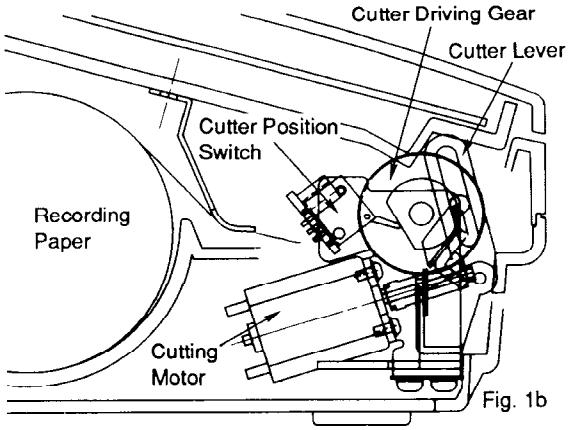


Fig. 1b

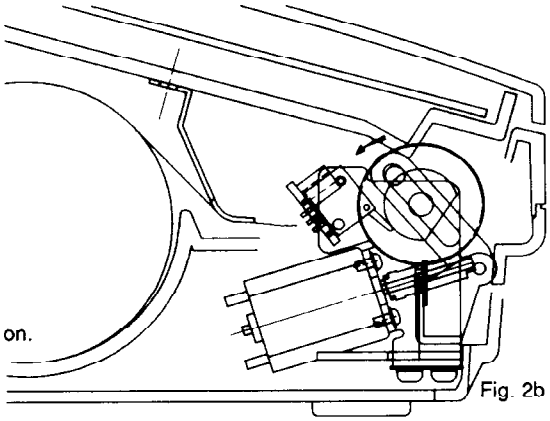


Fig. 2b

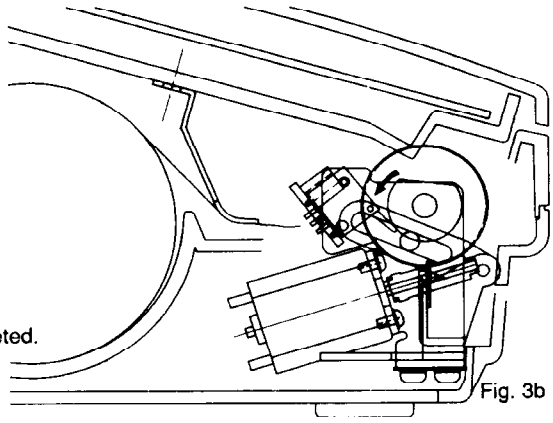


Fig. 3b

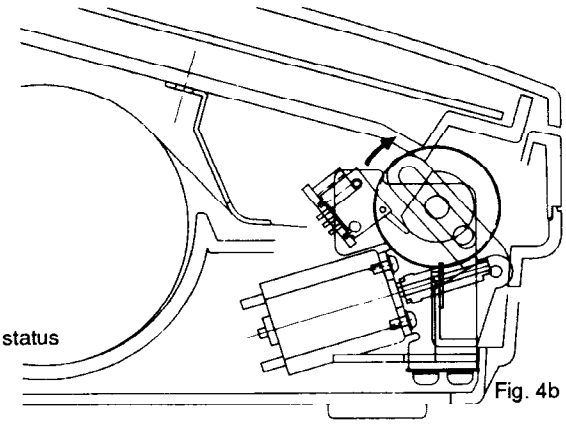
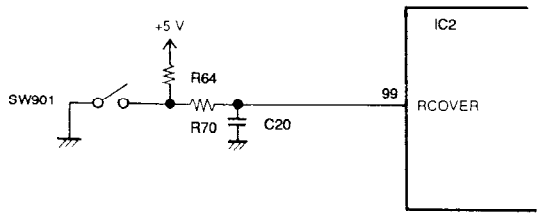


Fig. 4b

2) Sensor

[Cover Open Switch (SW901)]
When the upper cabinet is closed, the lever of SW901 is pushed and the switch becomes ON.

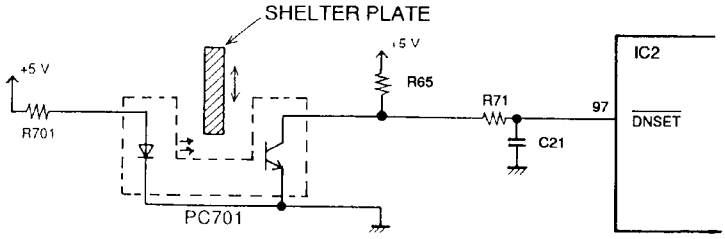
Circuit Diagram



	S901	Signal (IC2-99 pin)
Open	ON	Low Level
Close	OFF	High Level

[Document Sensor (PC701)]
When an document is set, the shelter plate shuts the sensor light, the phototransistor becomes OFF, and the input signal of IC2 pin (97) becomes high level.
When there is no document, the shelter plate passes the sensor light, the phototransistor becomes ON, and the input signal of IC2 pin (97) becomes low lovel.

Circuit Diagram

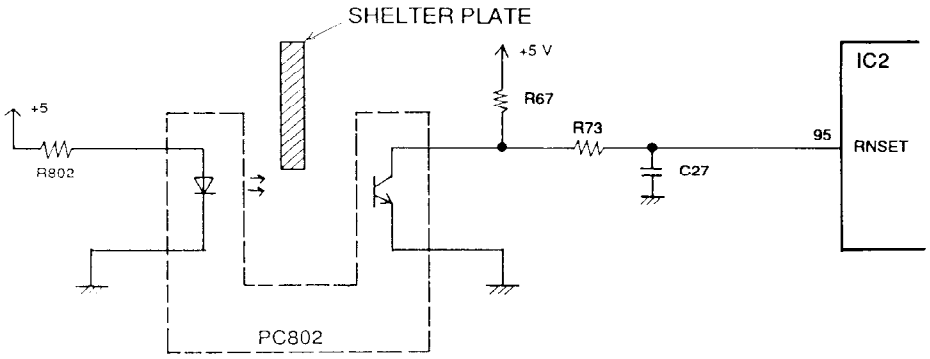


Document	Phototransistor	Signal (IC2-97 pin)
Set Document	OFF	High Signal
No Document	ON	Low Level

[Recording Paper Sensor (PC802)]

When recording paper is present, the recording paper pushes against one side of the shelter plate, so that the shelter plate shuts the light. Then the phototransistor becomes OFF and the signal of IC2 pin (95) becomes high level.
When the set runs out of recording paper, the shelter plate no longer will be pushed, so that the spring force brings it to the position where the light is passed. Then the phototransistor becomes ON and the signal of IC2 pin (95) becomes low level.

Circuit Diagram

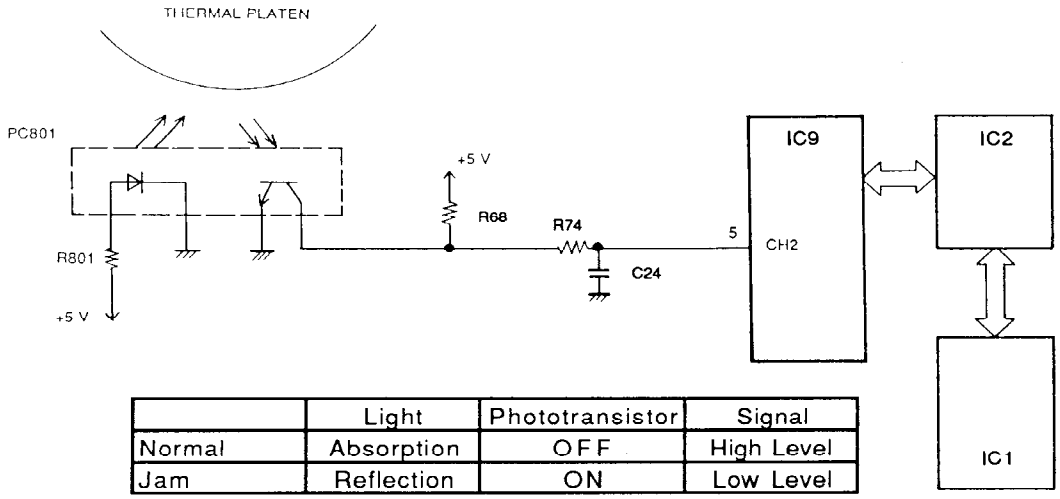


	Light	Phototransistor	Signal
Set Recording Paper	Shut	OFF	High Level
No Recording Paper	Pass	ON	Low Level

[Jam Sensor (PC801)]

A reflector-type photosensor is used. Normally, the light from the photodiode hits the thermal platen, but as there is no reflection, the phototransistor becomes OFF and the signal of IC9 pin (5) becomes high level.
IC201 is an A/D converter, controlled by IC1/IC2. (See A/D converter section)
When the recording paper has caused a jam by becoming wrapped around the platen, the phototransistor becomes ON and the signal of IC9 pin (5) becomes low level.

Circuit Diagram



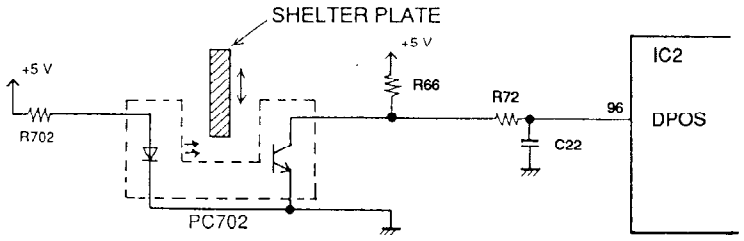
	Light	Phototransistor	Signal
Normal	Absorption	OFF	High Level
Jam	Reflection	ON	Low Level

[Read Position Sensor (PC702)]

When an document is brought to the read position, the shelter plate shuts the sensor light, the phototransistor becomes OFF, and the input signal of IC2 pin (96) becomes high level.

When there is no document at the read position, the shelter plate passes the sensor light, the phototransistor becomes ON, and the input signal of IC2 pin (96) becomes low level.

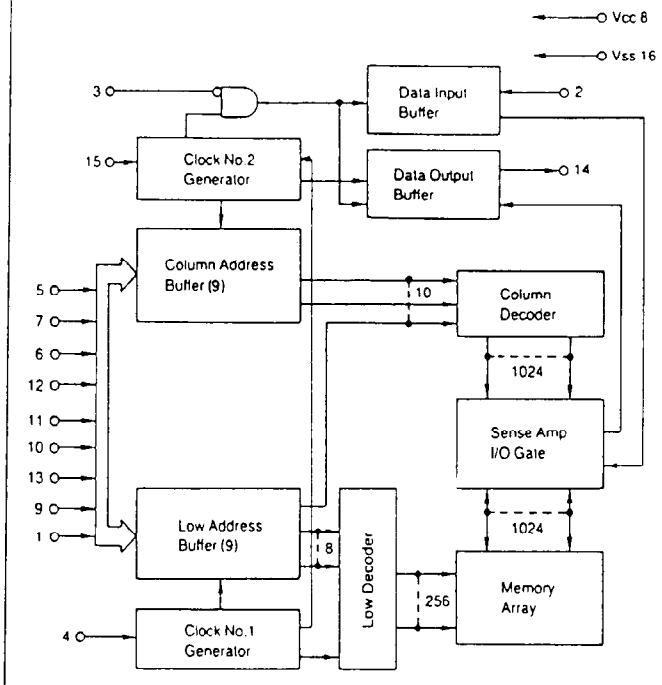
Circuit Diagram



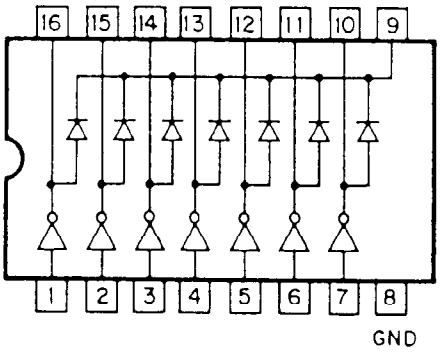
Document	Phototransistor	Signal
At the Read Position	OFF	High Signal
Out of the Read Position	ON	Low Level

IC BLOCK DIAGRAM

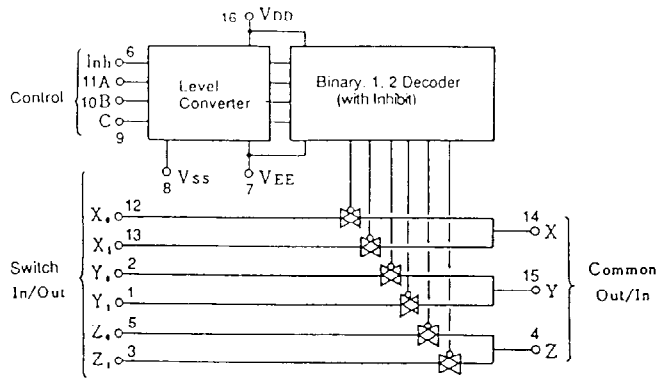
PQVITM41256A



PQVIBA12003



PQVINJ4053BM



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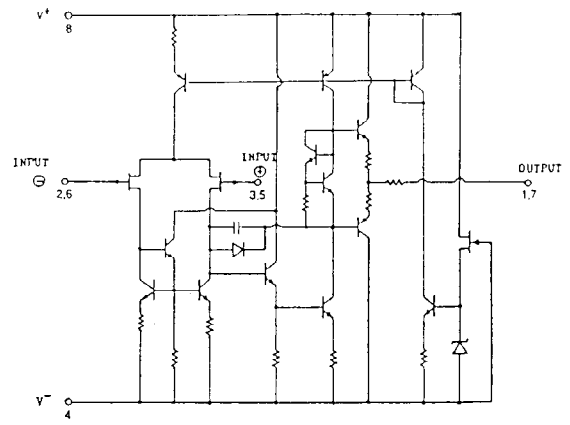

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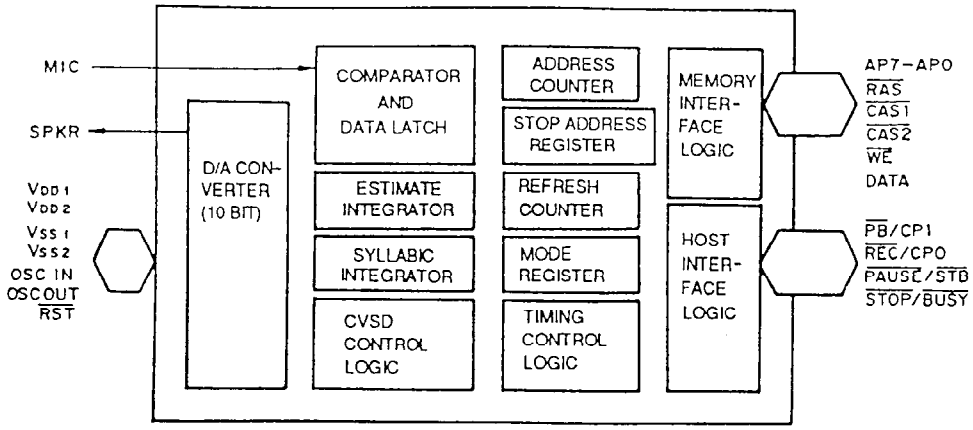
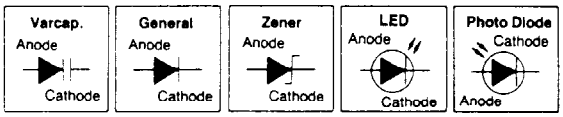


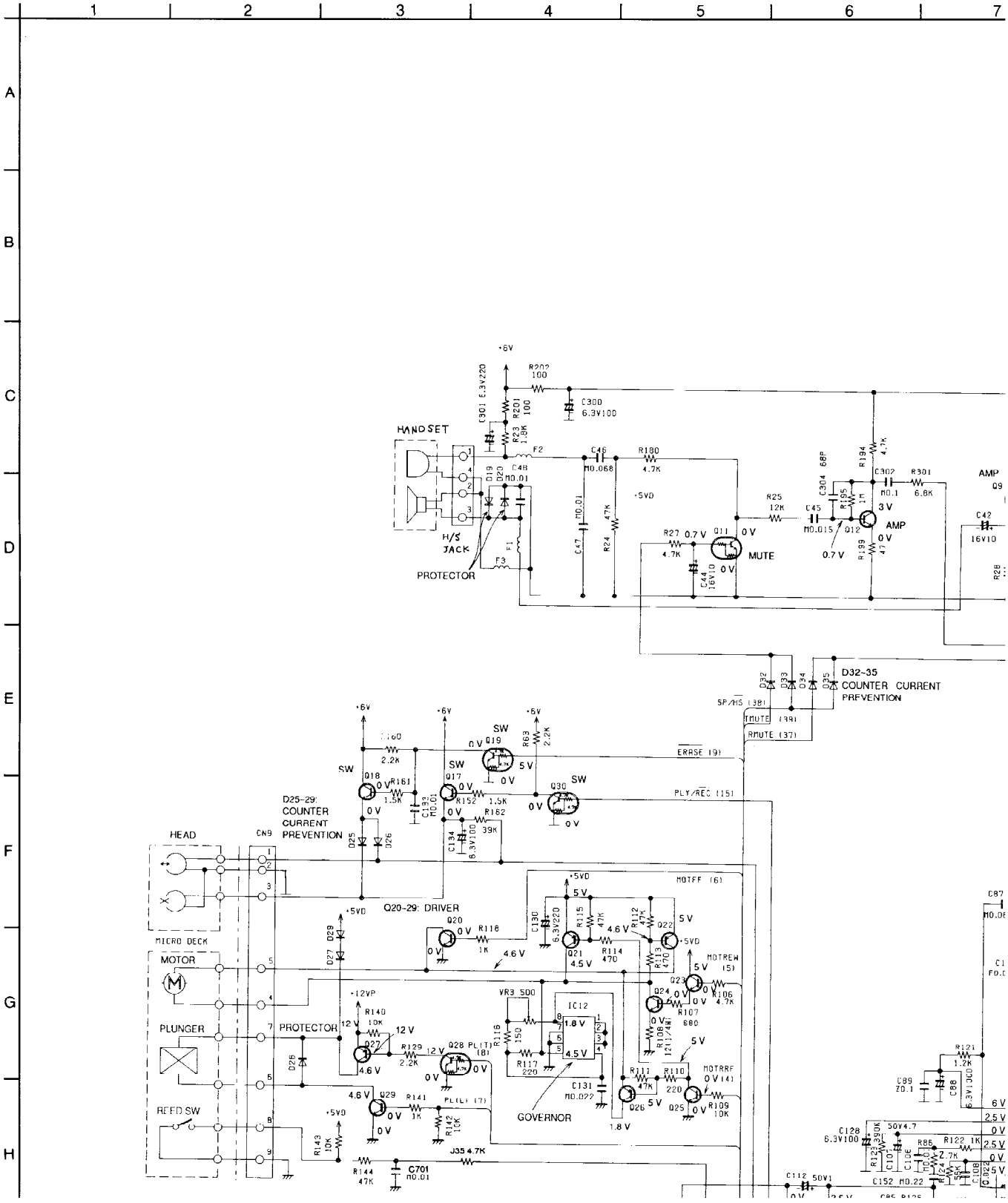
SCHEMATIC DIAGRAM

Notes:

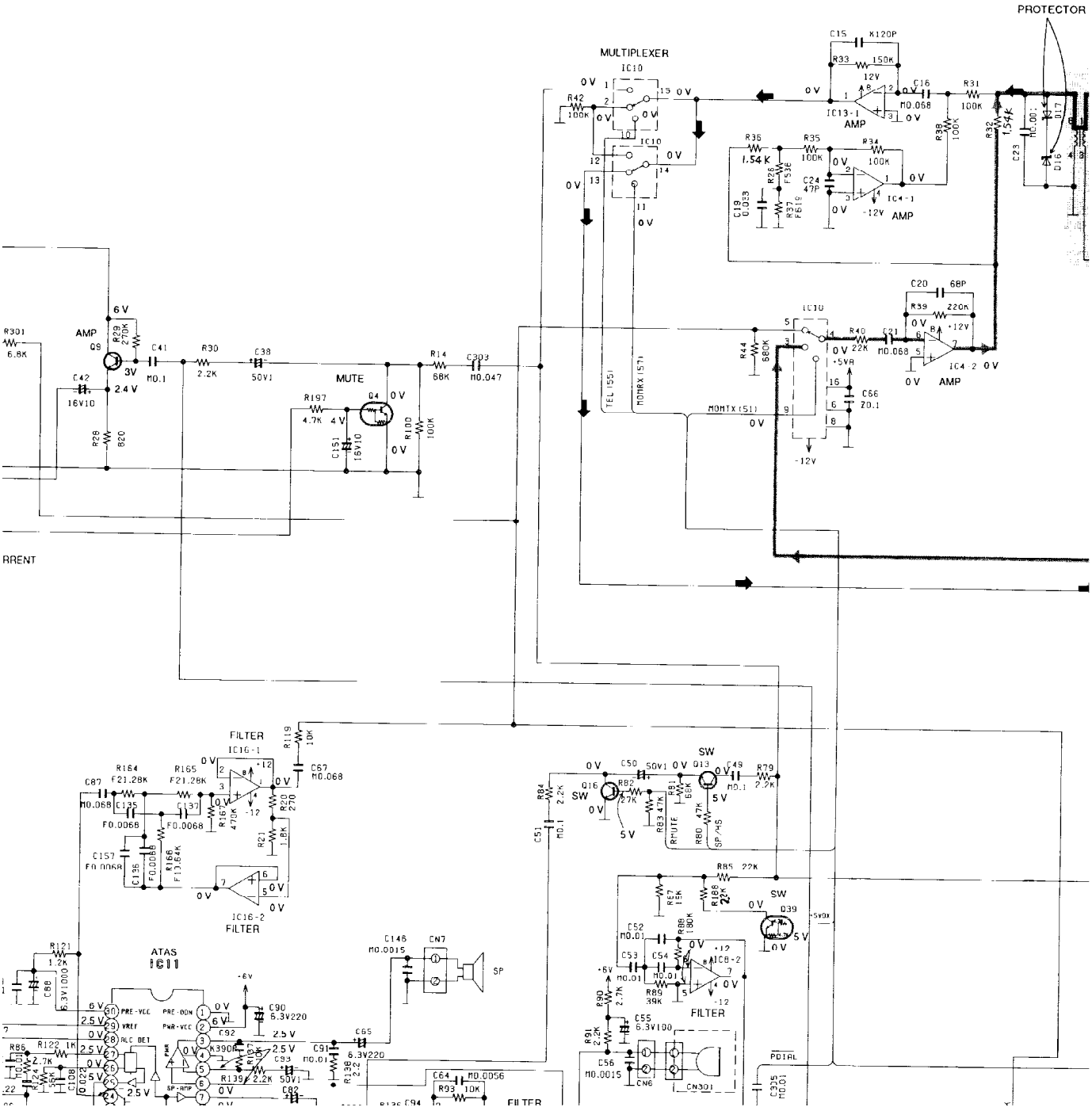
1. S1: Dialing mode selector switch in "TONE" position.
2. S2: Hook switch in "ON-HOOK" position.
3. S3: Ringer volume selector switch in "LOW" position.
4. SW01: Cutter position switch.
5. SW901: Cover open switch.
6. DC voltage measurements are taken with oscilloscope from ground.
7. The schematic diagram and circuit board may be modified at any time with the development of new technology.
8. 

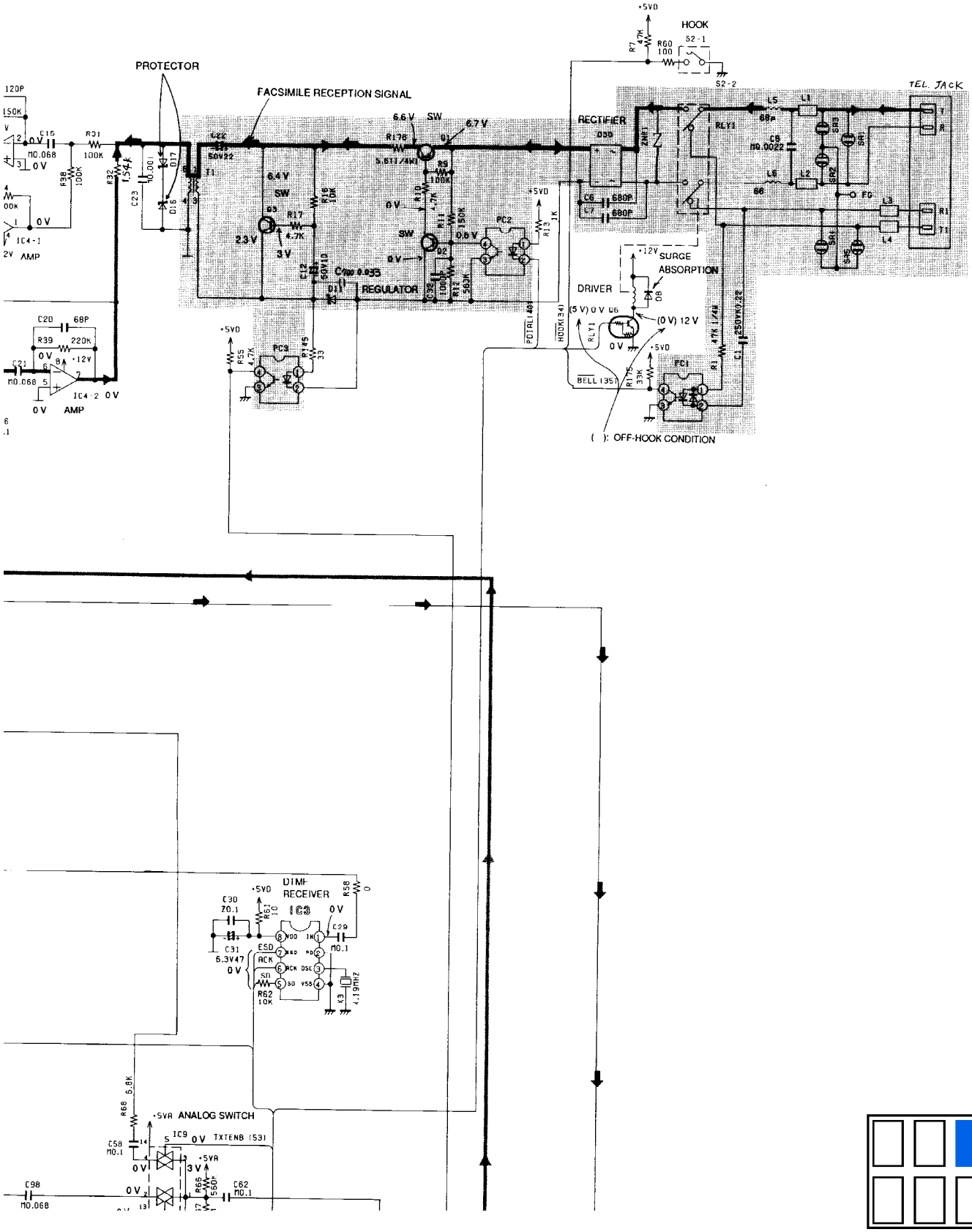
9. **Important safety notice**

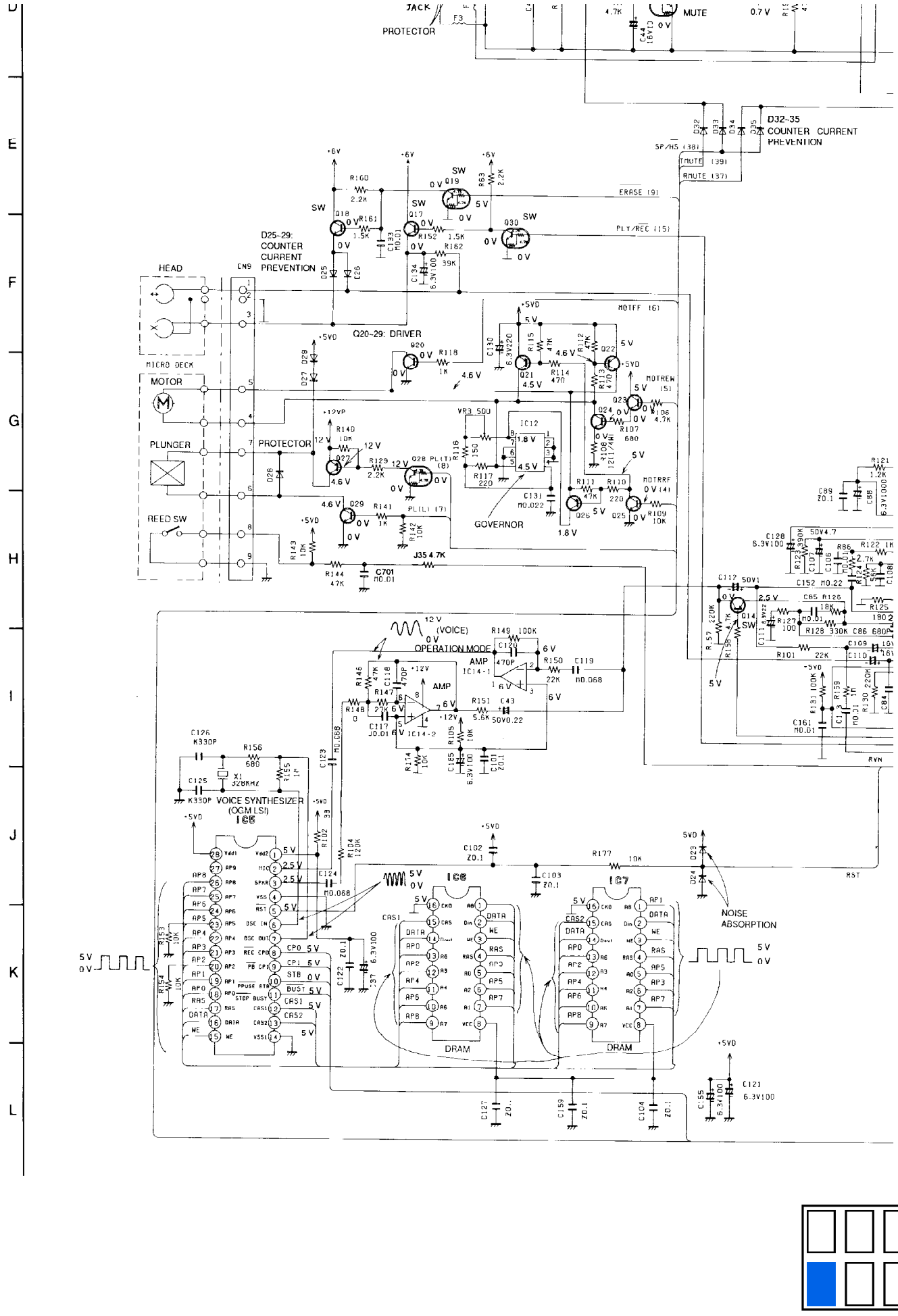
The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

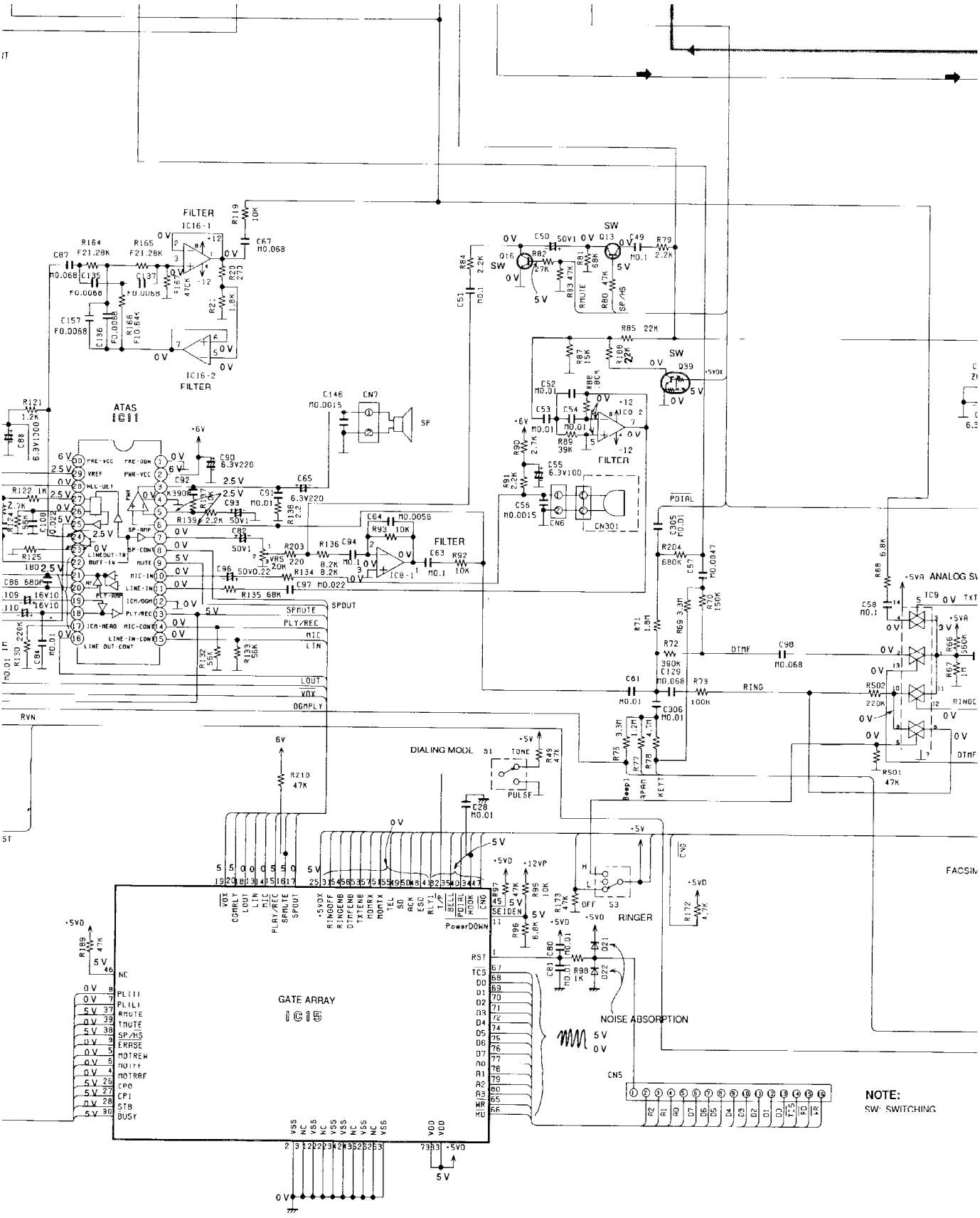

HANDSET
H/S JACK
PROTECTOR
MUTE
AMP
D32-35 COUNTER CURRENT PREVENTION
D25-29: COUNTER CURRENT PREVENTION
Q20-29: DRIVER
HEAD
MICRO DECK
MOTOR
PLUNGER
REED SW
GOVERNOR
SP/HS (38)
MUTE (39)
RMUTE (37)
ERASE (9)
PLY/REC (15)
MOTFF (6)
MOTREW (5)
MOTRRF (4)
PLL(L) (7)
PLL(R) (8)

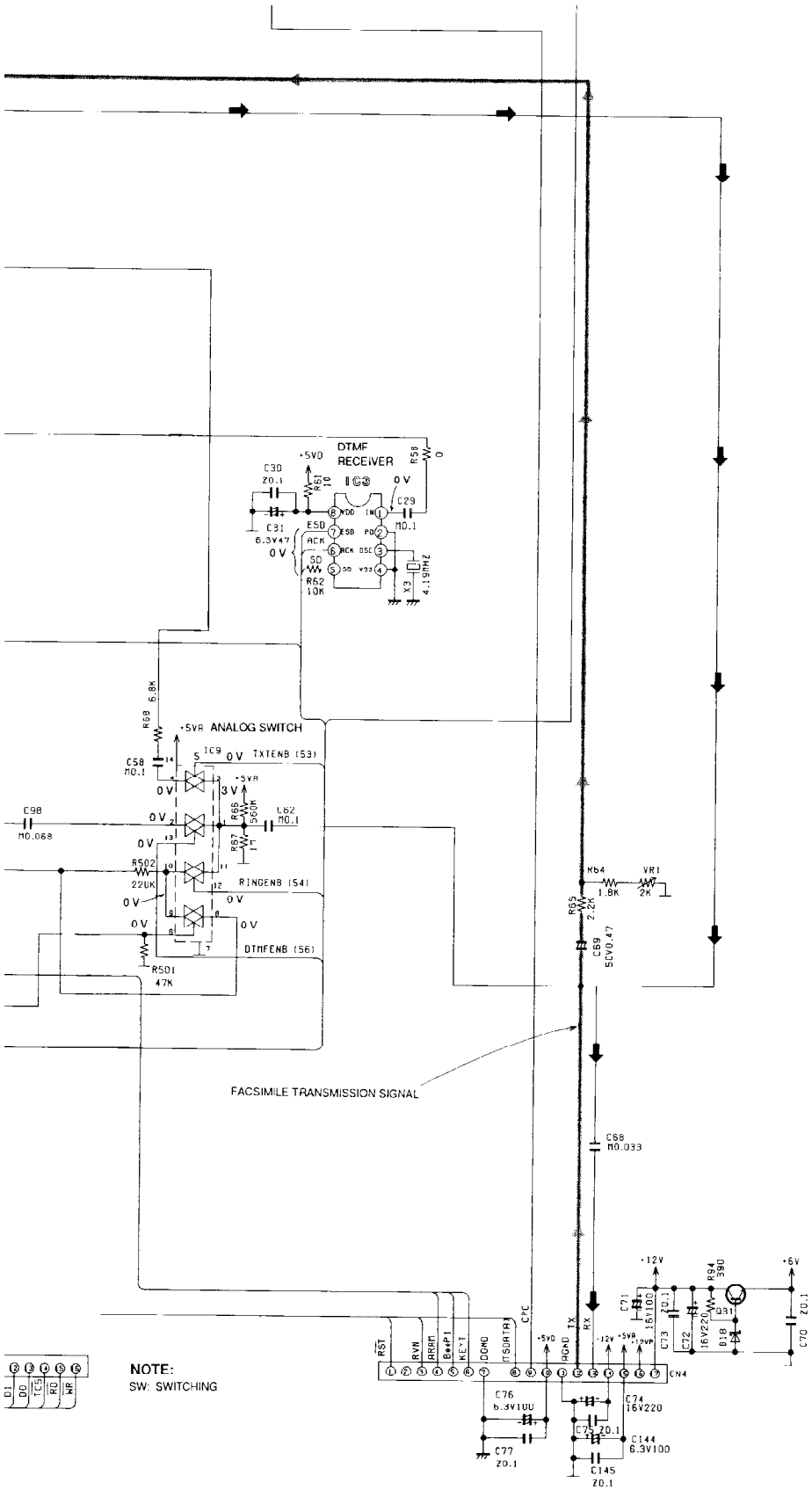
SCHEMATIC DIAGRAM (ANALOG CIRCUIT)



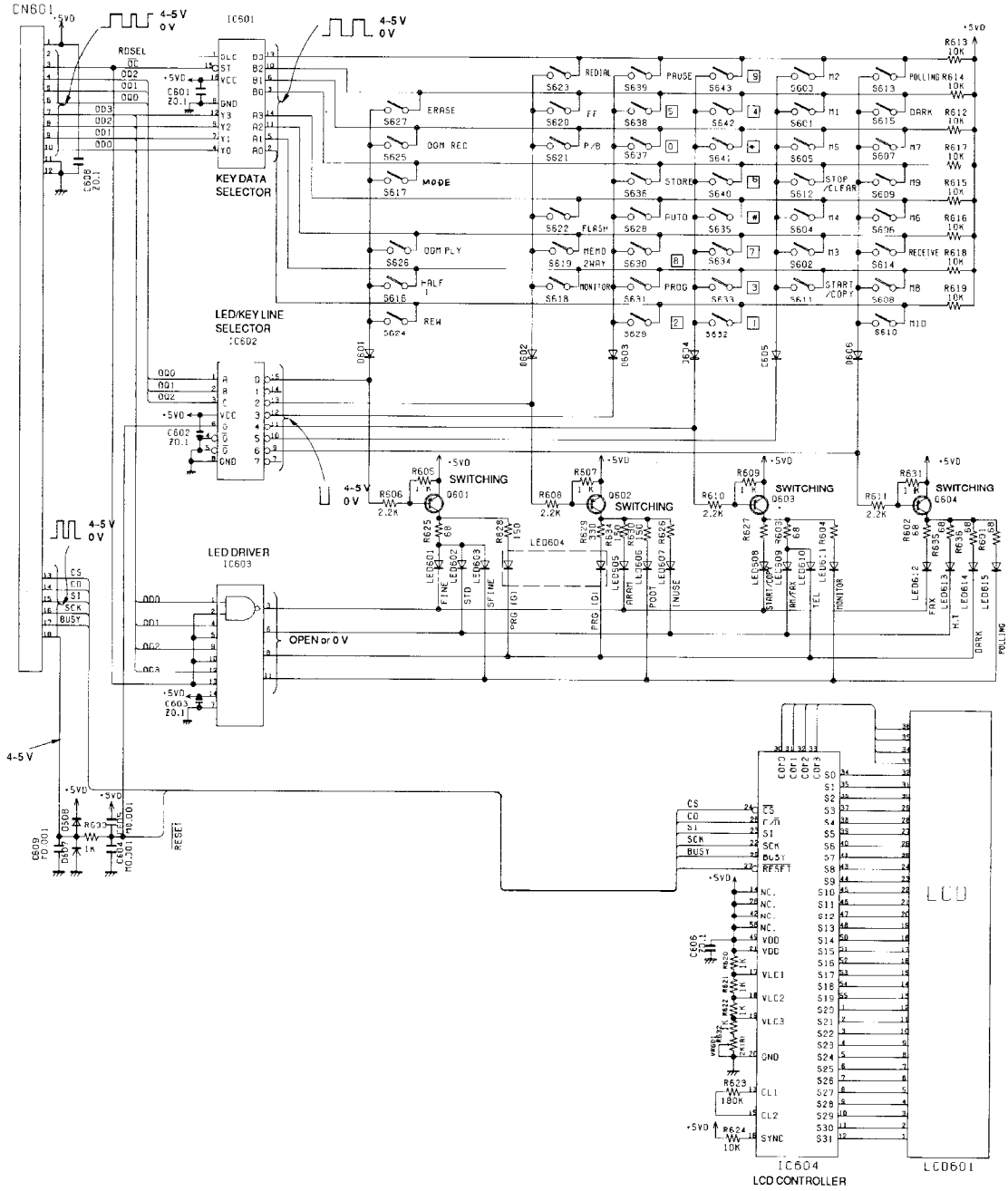

PROTECTOR
FACSIMILE RECEPTION SIGNAL
HOOK
52-1
52-2
TEL JACK
RECTIFIER
SURGE ABSORPTION
DRIVER
REGULATOR
AMP
AMP
DTMF RECEIVER
IC3
ANALOG SWITCH
IC9
TXTENB (S3)
( ): OFF-HOOK CONDITION


JACK
PROTECTOR
MUTE
0.7 V
D32-35
COUNTER CURRENT
PREVENTION
SP/HS (38)
TMUTE (39)
RMUTE (37)
ERASE (9)
PLY/REC (15)
D25-29:
COUNTER
CURRENT
PREVENTION
HEAD
CN9
MICRO DECK
MOTOR
PLUNGER
REED SW
PROTECTOR
Q20-29: DRIVER
MOTFF (6)
MOTREW (5)
MOTRRF (4)
PL(T) (8)
PL(L) (7)
GOVERNOR
J35 4.7K
C701
M0.01
(VOICE)
OPERATION MODE
AMP
VOICE SYNTHESIZER
(OGM LSI)
IC6
X1
328KHz
C126
K330P
C125
K330P
R156
680
IC6
IC7
DRAM
DRAM
NOISE
ABSORPTION
RST
RVN

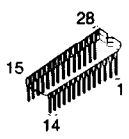
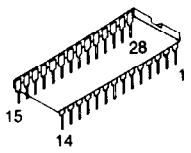
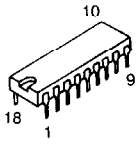
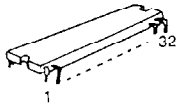
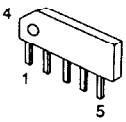

FILTER
IC16-1
IC16-2
FILTER
ATAS
IC11
GATE ARRAY
IC15
DIALING MODE
S1
TONE
PULSE
RINGER
S3
NOISE ABSORPTION
SW
FILTER
CN301
CN5
CN6
CN7
SP
SPOUT
SPMUTE
PLY/REC
MIC
LIN
LOUT
VOX
DGMPLY
DTMF
RING
PDIAL
ANALOG SW
FACSIM
NOTE:
SW: SWITCHING


DTMF
RECEIVER
+5V0
IC3
C30
Z0.1
C29
M0.1
C31
6.3V47
R58
0
R62
10K
X3
4.19MHz
ESD
ACK
OSC
+5VR ANALOG SWITCH
IC9
TXTENB (53)
RINGENB (54)
DTMFENB (56)
R69
6.8K
C58
M0.1
C98
M0.068
R65
560K
C62
M0.1
R67
1M
R502
22UK
R501
47K
R64
1.8K
VR1
2K
R65
2.2K
C69
50V0.47
FACSIMILE TRANSMISSION SIGNAL
C68
M0.033
+12V
+6V
R84
390
Q31
B1B
C71
16V100
C73
Z0.1
C72
16V220
C70
Z0.1
CN4
RST
RVM
HRMM
BEEP1
KEY
DGND
MSDATA
CPC
+5V0
HOOK
TX
RX
+12V
+5VR
+12VB
C76
6.3V100
C77
Z0.1
C74
16V220
C75
Z0.1
C144
6.3V100
C145
Z0.1
D1
D0
TCS
RD
WR
NOTE:
SW: SWITCHING

SCHEMATIC DIAGRAM (OPERATION CIRCUIT)



TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES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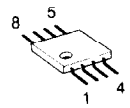
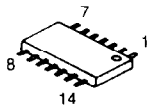
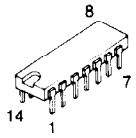
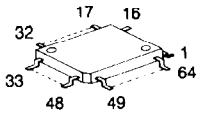
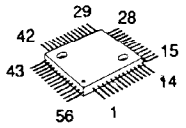
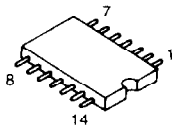
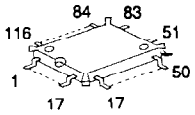
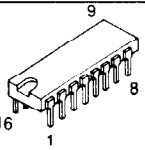
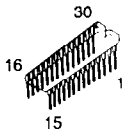
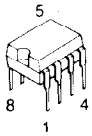
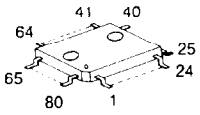
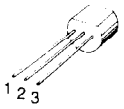
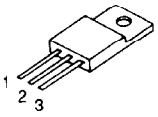
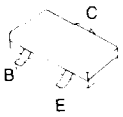
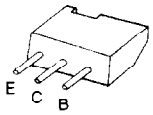
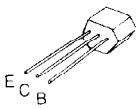
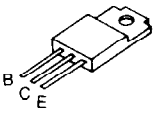
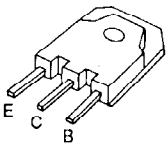
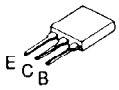
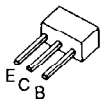
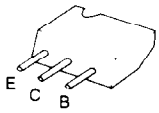
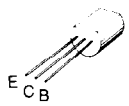
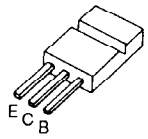
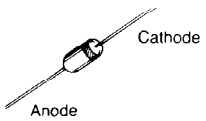
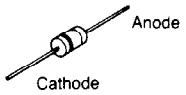
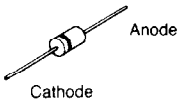
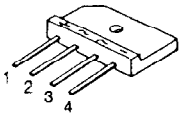
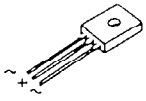
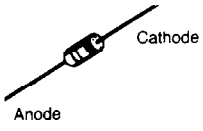
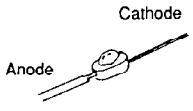
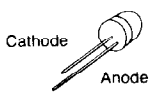
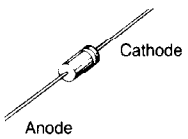
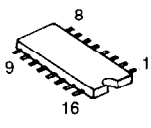
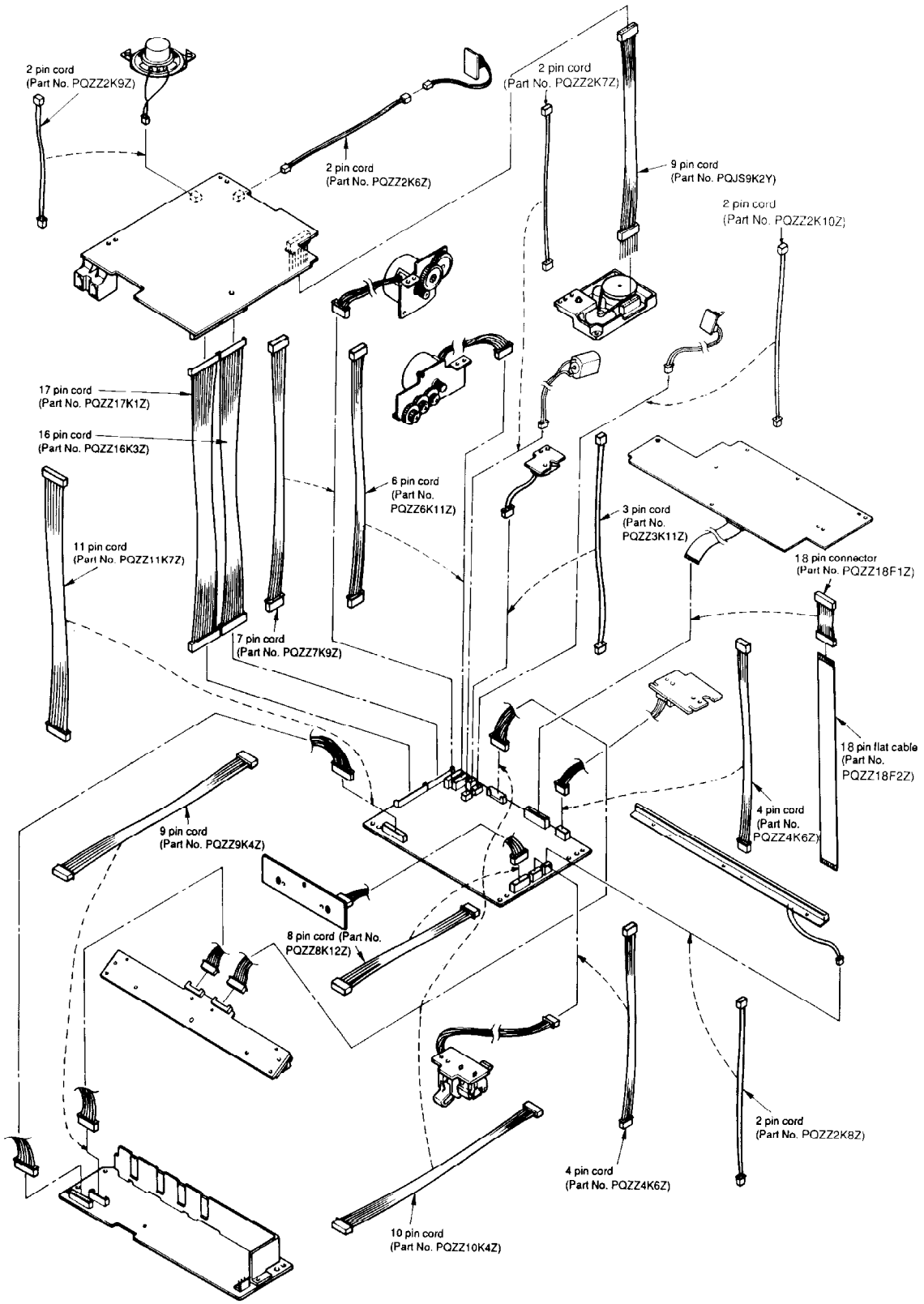
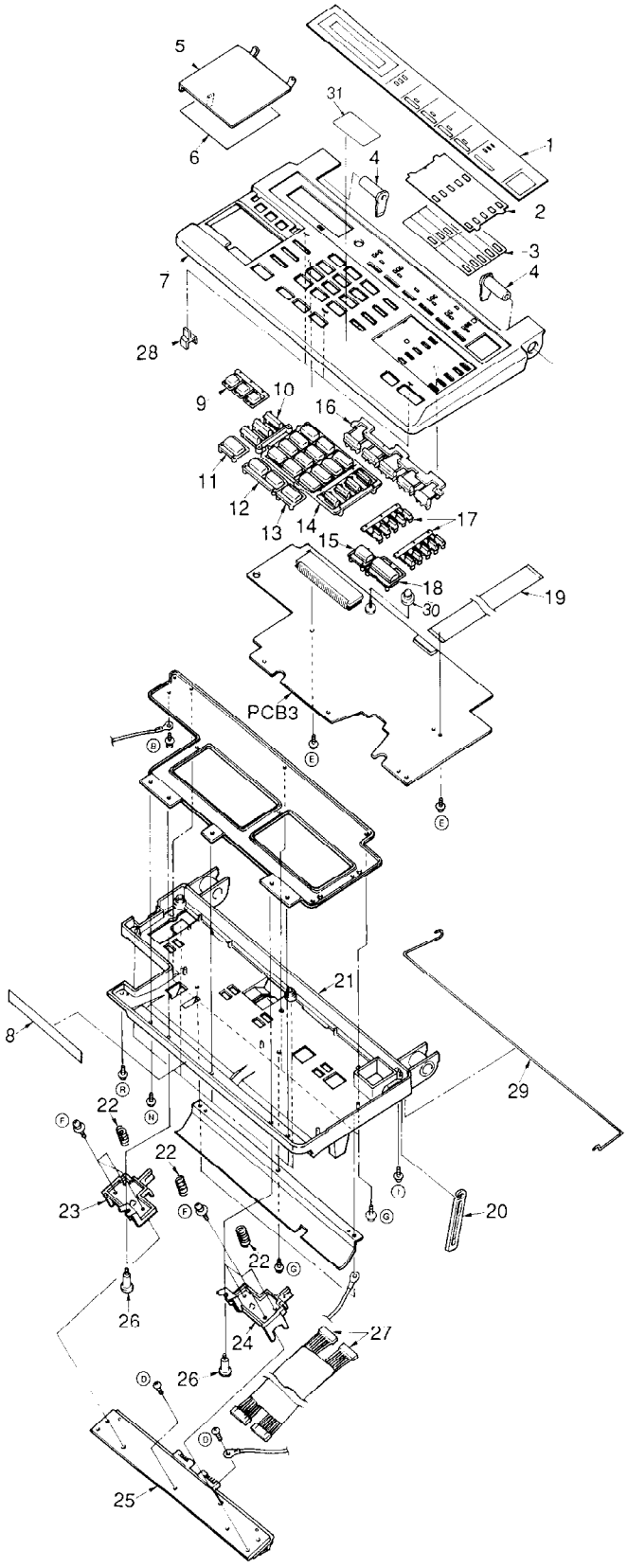
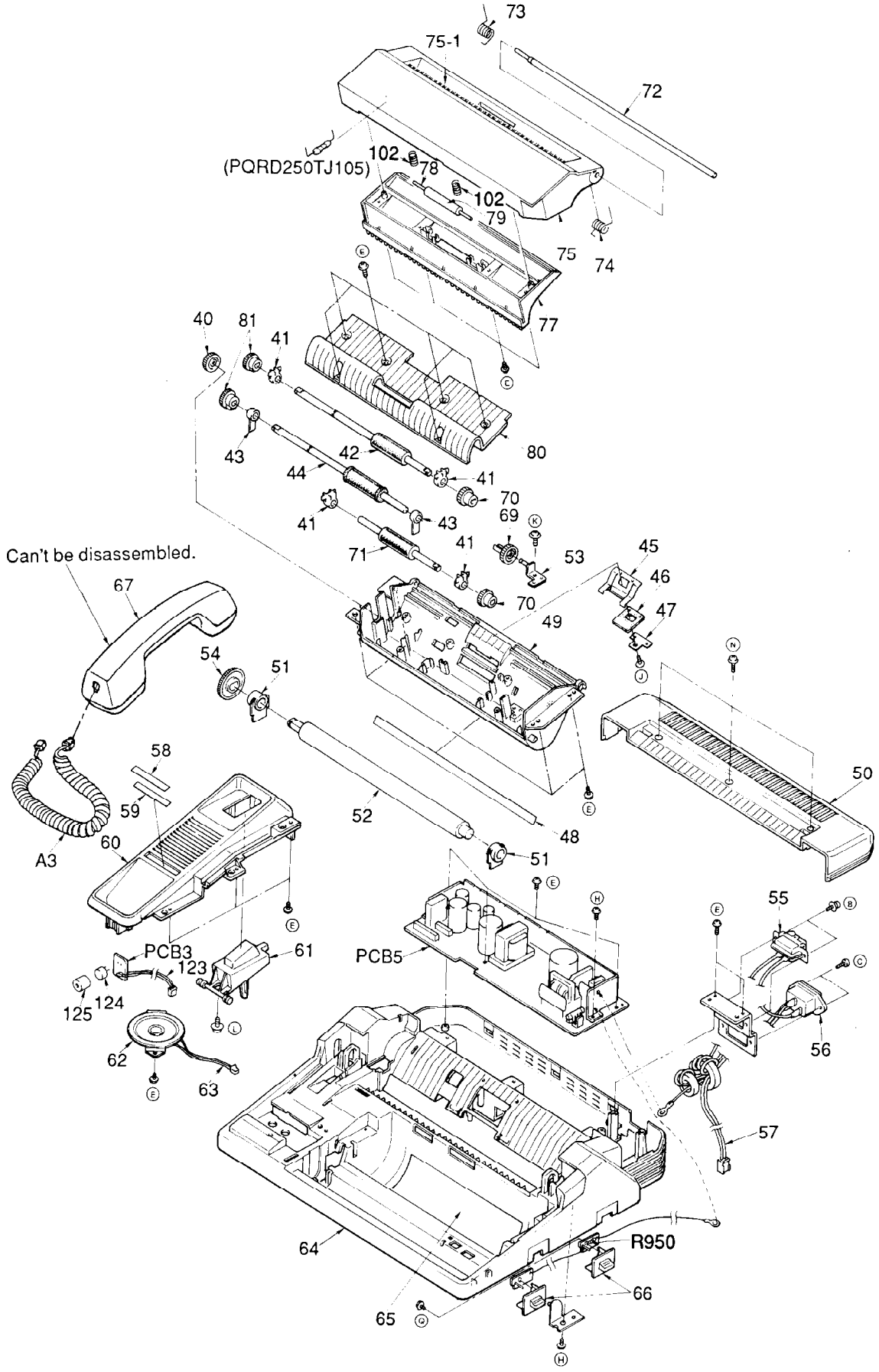
 PQVINJM082BM PQVINJM4558M	 PQVISN7S38S	 PQVIPD4066BC PQVIDC0834CN	 PQVI9218B448	 PQVIPD7225GB
 PQVITC4053BF	 PQVIR11493	 PQVIM51977P PQVITM41256A PQVINJ4053BD PQVIBA12003	 AN6181K	 PQVIM3074AE1 PQVIBA6220
 PQVINJ2360D PQVINJM4558D	 PQVI672191F	 PQVIUPC1093J	 PQVITA7812AP	 PQVTDTC143E PQVTDTC114K, 2SB1218A, 2SD1819A 2SA1602F
 2SC1652, 2SB1240AR 2SB1322, 2SD1994A	 PQVTDTC143XS 2SC1740S	 2SD1266P	 2SK1488	 2SA1626
 PQVTBB1A4A	 2SD662B	 2SC2235	 2SD2136	 PQVDHZS2B1, 1SS131, MA700A
 MA7200 1SS147, MA4270	 PQVD1GU42, PQVD1JU41 1S1588	 PQVDD5SBA40S	 PQVDD5LC20U PQVDD10LC20U	 MA4027M MA4068, MA4056 MA7062, MA4051
 PQVDS1YB40F1	 PQVDGL1E11C PQVDGL1D11E	 LN38GP LN28RPXTA3 LN086WP38	 PQVD1SR354A	 PQVIM66705FP PQVISN7H138S PQVISN7H258S

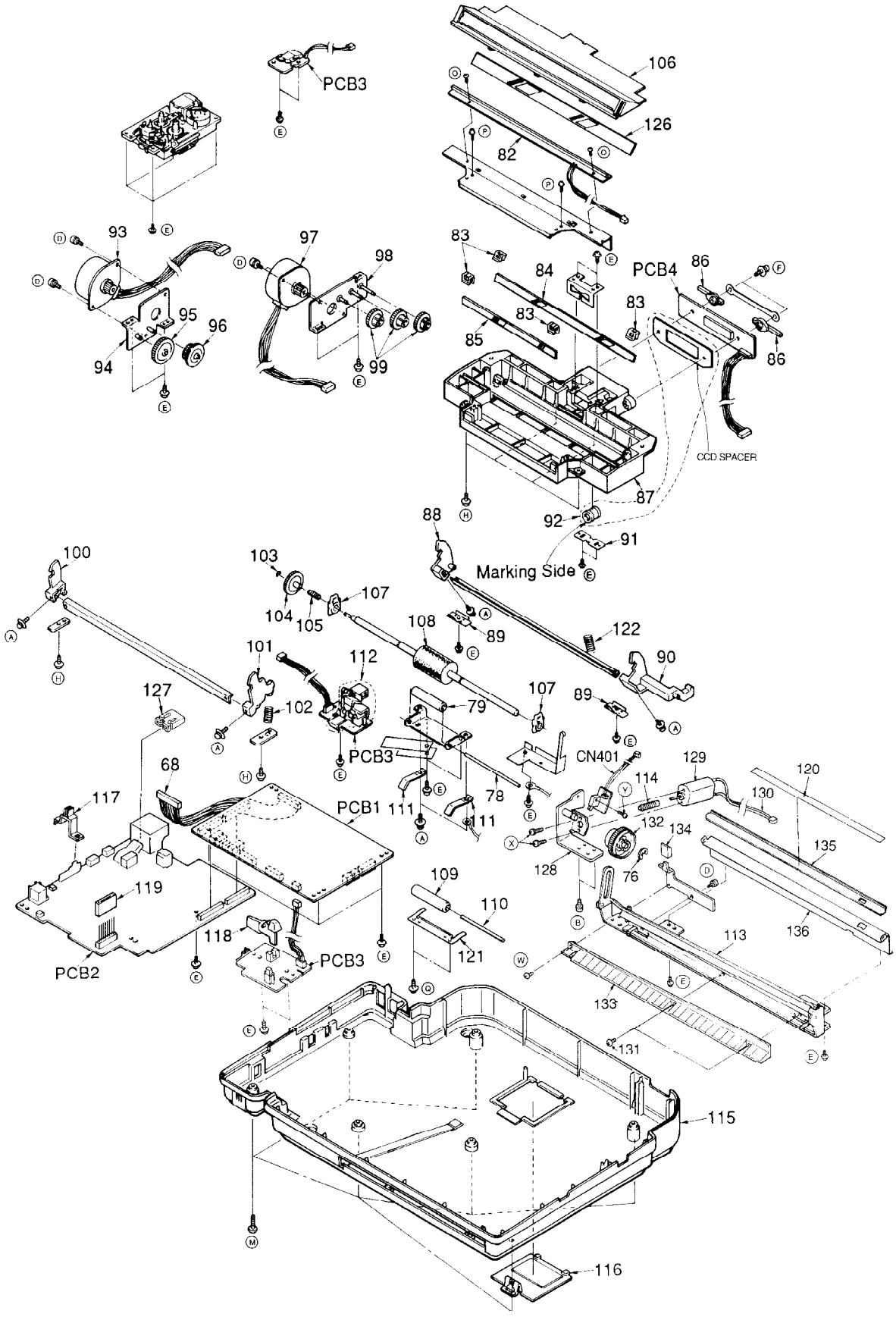
CONNECTOR LEAD AND EXTENSION CORD CONNECTING METHOD



CABINET, MECHANICAL AND ELECTRICAL PARTS LOCATION




73
75-1
72
(PQRD250TJ105)
102
78
102
79
75
74
77
40
81
41
43
42
44
41
70
80
41
43
69
71
41
53
45
46
47
70
49
Can't be disassembled.
67
54
51
58
59
52
48
51
50
A3
60
PCB3
123
61
125
124
62
63
PCB5
55
56
57
64
R950
66
65


PCB3
106
126
82
93
97
98
83
84
PCB4
86
83
85
83
86
95
96
94
99
CCD SPACER
87
88
92
91
Marking Side
100
103
107
104
105
108
89
122
90
101
112
127
102
79
107
89
PCB3
CN401
129
120
68
114
130
117
PCB1
111
111
78
132
134
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76
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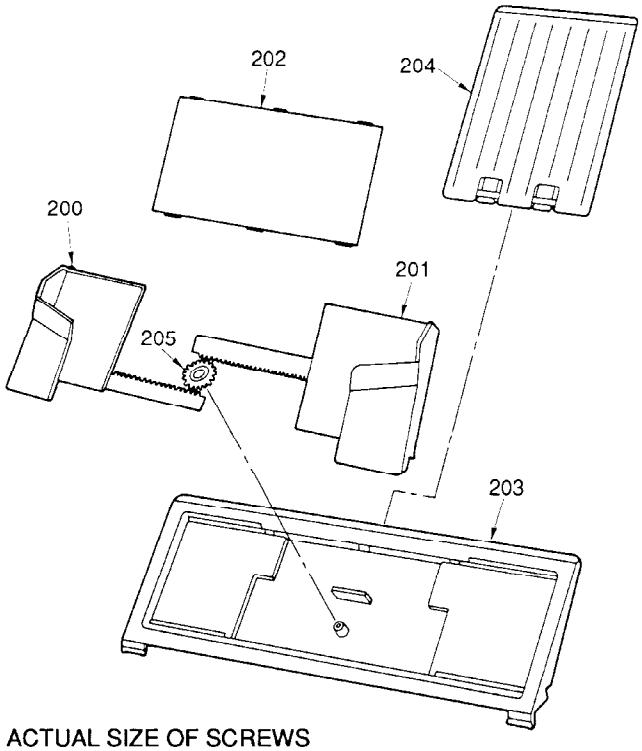
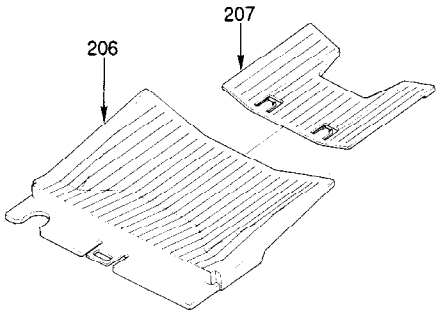
110
119
113
136
118
PCB3
121
PCB2
133
131
115
116

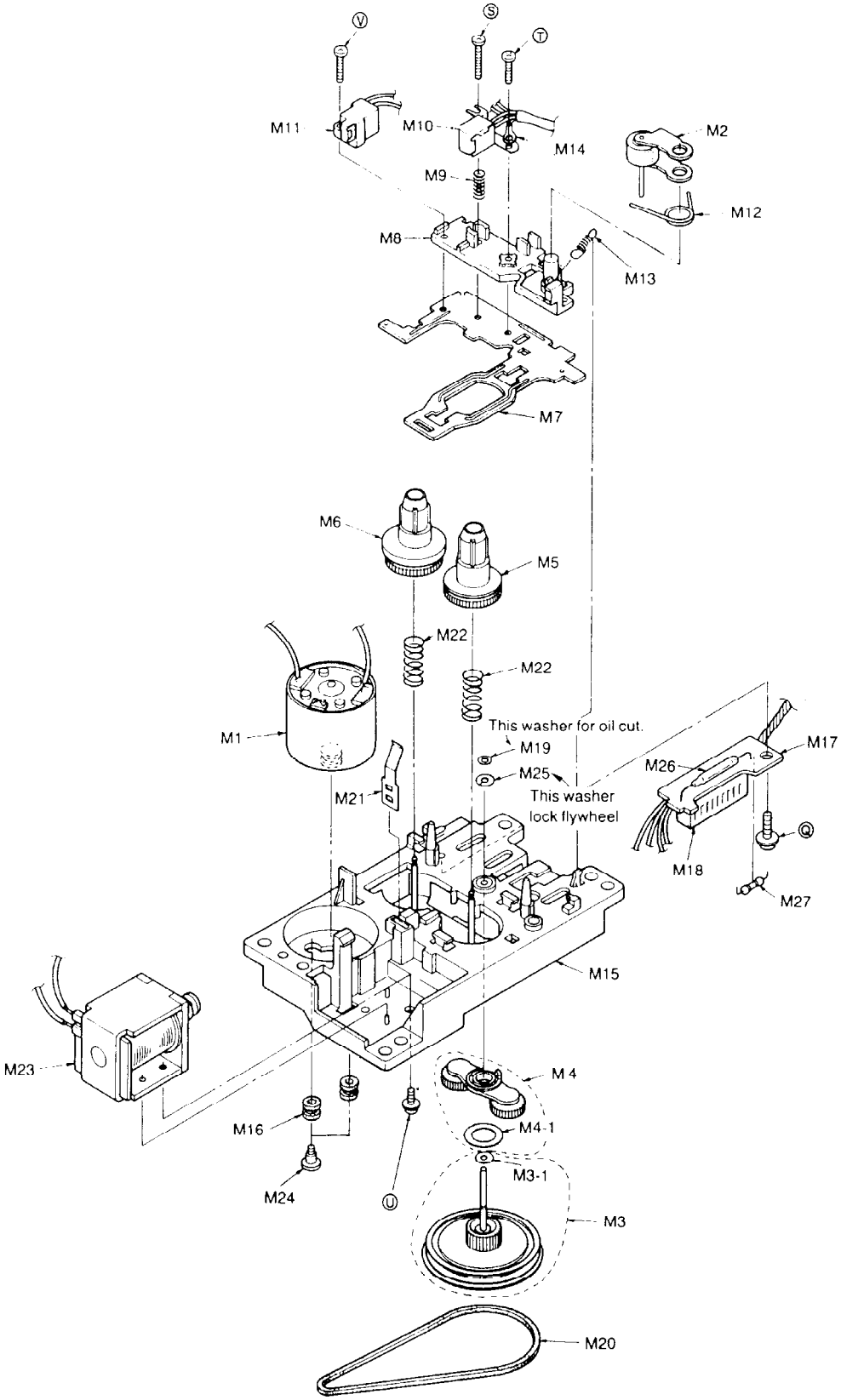




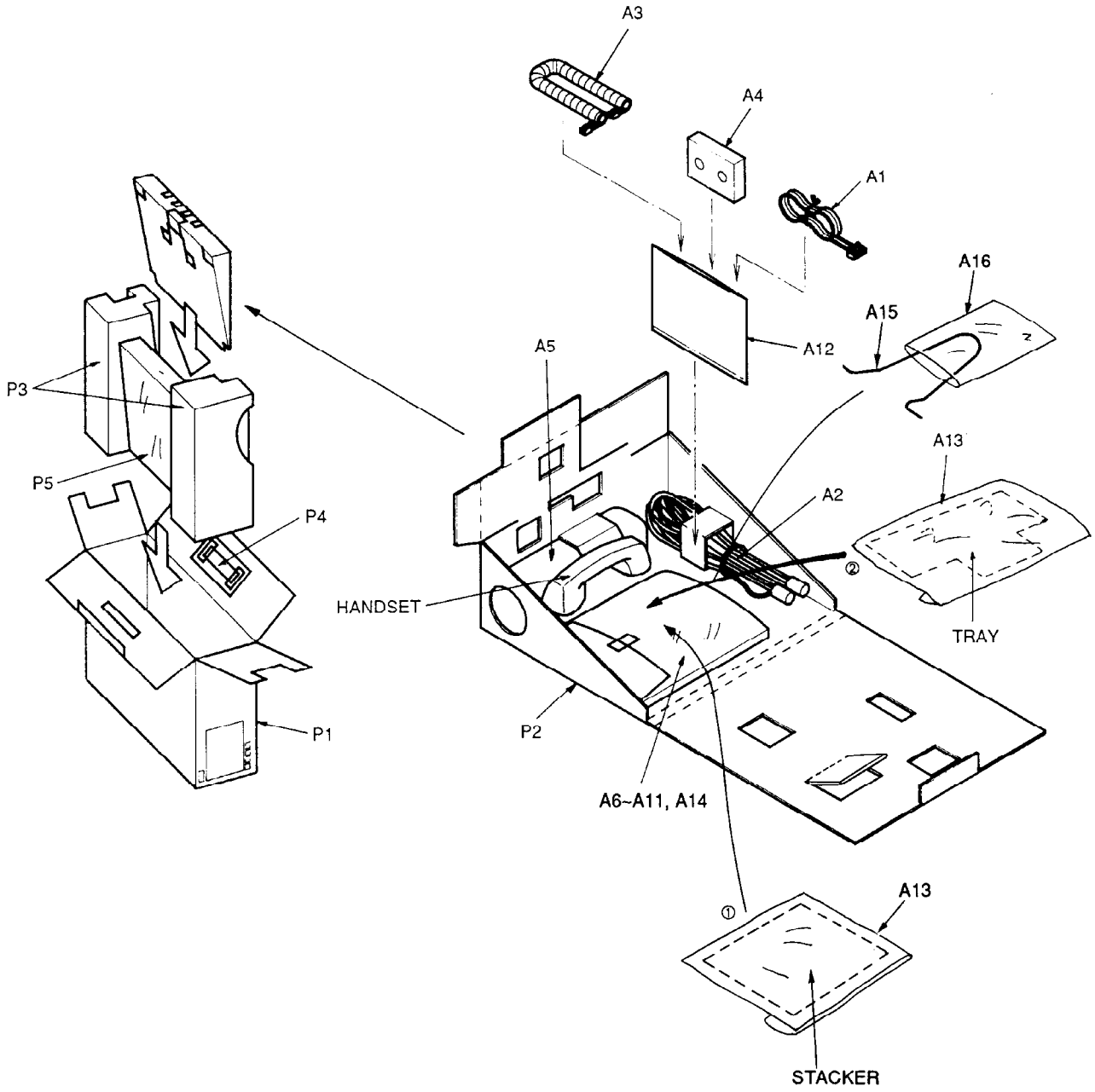
ACTUAL SIZE OF SCREWS

Ref. No.	Figure	Part No.	Ref. No.	Figure	Part No.	Ref. No.	Figure	Part No.
Ⓐ		XYN3+F6	Ⓛ		PJHE5065Z	Ⓦ		XSN3+6
Ⓑ		XYN3+C6	Ⓜ		XTW3+S14P	Ⓧ		XYN2+C4
Ⓒ		XSS3+6	Ⓝ		XTW3+S10PFZ	Ⓨ		XSN2+C8
Ⓓ		XYN3+C4	Ⓞ		XSN26+4			
Ⓔ		XTW3+S8M	Ⓟ		XTW3+S12M			
Ⓕ		XYN3+F10	Ⓠ		XTW26+6F			
Ⓖ		XYN3+F8	Ⓡ		XTB3+8GFZ			
Ⓗ		XTW3+S10M	Ⓢ		XSN17+10FN-3			
Ⓘ		XTW3+S16M	Ⓣ		XSN17+6FZ-3			
Ⓙ		XTS26+6C	Ⓤ		XTW26+5LF			
Ⓚ		XTN3+6G	Ⓥ		XSN17+7FN-3			

CASSETTE DECK PARTS LOCATION



ACCESSORIES AND PACKING MATERIALS



REPLACEMENT PARTS LIST

Model KX-F90

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety. when replacing any of these components, use only manufacture's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) k=l000Ω,M=l000kΩ
   All capacitors are in MICRO FARADS(μF) P=μμF
   *Type &Wattage of Resistor
   Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor
Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyster
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
		CABINET, MECHANICAL AND ELECTRICAL PARTS	
1	PQGP118Z	PANEL	1
2	PQHR5288Z	TRANSPARENT PLATE, MEMORY CARD	1
3	PQHP5056Z	CARD, MEMORY	1
4	PQDF9031Z	SHAFT, OPERATION GRILLE	2
5	PQKG10Z	CASSETTE LID	1
6	PQQT5150Z	INSTRUCTION LABEL	1
7	PQGG87Z	GRILLE, OPERATION	1
8	PQQT4336Z	CAUTION LABEL-A	1
9	PQBCX171Z2	BUTTON, OGM PLAY/REC/ICM EARSE	1
10	PQBCX170Z	BUTTON, REW/FF/MEMO/2WAY	1
11	PQBC260Z	BUTTON, PALYBACK/PAUSE	1
12	PQBCX172Z	BUTTON, FLASH, REDIAL	1
13	PQBC261Z	BUTTON, MONITOR/VOICE STDBY	1
14	PQBCX167Z	BUTTON, DIAL/PRO/SET/PAUSE/AUTO	1
15	PQBC259Z	BUTTON, STOP/CLEAR	1
16	PQBCX169Z	BUTTON, FINE/LIGHT/POLLING/RECE.	1
17	PQBCX168Z	BUTTON, MEMORY	2
18	PQBC258Z	BUTTON, START/COPY	1
19	PQJE97Y	FLAT CABLE	1
20	PQHR9466Z	HOLDER, OPERATION GRILLE	1
21	PQHR9423Z	COVER, OPERATION GRILLE	1
22	PQUS211Z	SPRING, THERMAL HEAD	3
23	PQHR9421Z	LEFT GUIDE, THERMAL HEAD	1
24	PQHR9422Z	RIGHT GUIDE, THERMAL HEAD	1
25	PQJHS8Z	THERMAL HEAD	1
26	PQHE5020Y	SCREW, THERMAL HEAD M' TG	2
27	PQJS19S30Y	CONNECTOR, 19P	1
28	PQGP119Z	LED COVER	3
29	PQUS213Z	SPRING, OPERATION GRILLE COVER	1
30	PQBD155Z	KNOB, CONTRAST	1
31	PQQT9529Z	LABEL, #800 CALL	1
40	PQDG5036Z	MIDDLE GEAR-A	1
41	PQHR9426Z	SPACER, FEED ROLLER	4
42	PQDN19Y	ROLLER, DOCUMENT FEED	1
43	PQHR9427Z	SPACER, FEED ROLLER	2
44	PQDN20Y	ROLLER, DOCUMENT DISCHARGE	1
45	PQUS187Y	SPRING, DOCUMENT SEPARARTION	1
46	PQHG827Z	RUBBER, DOCUMENT SEPARATION	1
47	PQHM117Z	METAL, SEPARATION RUBBER M' TG	1
48	PQHR5289Z	READING PLATE	1
49	PQZMF50M	DOCUMENT GUIDE-A ASS'Y	1
50	PQUV104Y	REAR COVER	1
51	PQHR9424Z	SPACER, THERMAL PLATEN	2
52	PQDN17Z	THERMAL PLATEN	1
53	PQMD9021Z	GEAR CHASSIS-A	1
54	PQDG5037Z	GEAR, PLATEN	1
55	EST15704V	SWITCH, POWER ⚠	1
56	PQJP3A2Z	AC SOCKET ⚠	1
57	PQJS2L94Z	CONNECTOR, 2P ⚠	1
58	PQHR576Z	TRANSPARENT PLATE, TEL. NO. CARD	1
59	PQHP532X	CARD, TEL. NO.	1
60	PQKM195W	CABINET BODY, HANDSET CRADLE	1
61	PQBE32Y	BUTTON, HOOK	1
62	PQAS5P05Z	SPEAKER	1
63	PQJS2L93Z	CONNECTOR, 2P	1
64	PQYMF90M	UPPER CABINET ASS'Y	1
65	PQQT4335Z	CAUTION LABEL-B	1
66	PQBD163Z	KNOB, FRONT/BACK LID OPEN	2
67	PQJX2PM409Z	HANDSET ASS'Y	1
68	PQJS11M34Z	CONNECTOR, 11P	1
69	PQDG5043Z	MIDDLE GEAR-B	1
70	PQDG5044Z	GEAR, RECORDING PAPER FEED	2
71	PQDN21Y	ROLLER, DOCUMENT FEED	1
72	PQDF9028Z	SHAFT, DOCUMENT LID	1
73	PQUS219Y	SPRING, DOCUMENT LID (LEFT)	1
74	PQUS221Y	SPRING, DOCUMENT LID (RIGHT)	1
75	PQYEF50M	DOCUMENT LID	1
75-1	PQJE113Z	BRUSH-A	1
76	XUC4FY	RETAINING RING	1
77	PQHR9428Z	DOCUMENT GUIDE, UPPER SIDE	1
78	PQDF9029Z	SHAFT, SUB ROLLER	2
79	PQDR16Z	SUB ROLLER-A	2
80	PQHR9445Y	DOCUMENT GUIDE-B	1
81	PQDG5038Z	GEAR, RECORDING PAPER FEED	2
82	LN803184UN	LED ARRAY	1
83	PQUS216Z	SPRING, MIRROR M' TG	4
84	PQ0M3Z	MIRROR-A (LONG)	1
85	PQ0M4Z	MIRROR-B (SHORT)	1
86	PQHR9429Z	LEVER, CCD ADJUSTMENT	2
87	PQZEF50M	CCD CHASSIS	1
88	PQHR9419Z	LOCK LEVER-L	1
89	PQUS208Z	SPRING, LOCK LEVER	2
90	PQHR9420Z	LOCK LEVER-R	1
91	PQUS217Z	SPRING, LENS M' TG	1
92	PQWEF50M	LENS (WITH SPACER)	1
93	PQJQ26Z	MOTOR, RECEPTION	1
94	PQMD9014Z	GEAR CHASSIS-B	1
95	PQDG5035Z	MIDDLE GEAR-B	1
96	PQDG5034Z	MIDDLE GEAR-C	1
97	PQJQ27Z	MOTOR, TRANSMISSION	1
98	PQMD9013Z	GEAR CHASSIS-C	1
99	PQDG5033Z	MIDDLE GEAR-D	3
100	PQHR9417Z	LOCK LEVER, LEFT	1
101	PQHR9418Z	LOCK LEVER, RIGHT	1
102	PQUS207Y	SPRING,RIGHT LOCK LEVER, ROLLER	3
103	XUC2FY	RETAINING RING	1
104	PQDG5039Z	GEAR, SEPARATION	1
105	PQUS215Z	SPRING, SEPARATION ROLLER	1
106	PQUV103Y	COVER	1
107	PQHR9425Z	SPACER, SEPARARION ROLLER	2
108	PQDN18Z	ROLLER, DOCUMENT SEPARATION	1
109	PQDR17Z	SUB ROLLER-B	1
110	PQDF9042Z	SHAFT, SUB ROLLER-B	1
111	PQUS209Z	SPRING, SUB ROLLER-A M' TG	2
112	PQHR9539Z	LEVER, SENSOR	1
113	PQSG010Z	CUTTER	1
114	PQDG5041Z	WORM GEAR	1
115	PQYFF90M	LOWER CABINET	1
116	PQKE55Z1	ROM LID	1
117	PQBD162Z	KNOB, VOLUME	1
118	PQHR9416Y	LEVER, RECORDING PAPER DET.	1
119	PQHR9510Z	SPACER, DECK CONNECTOR	1
120	PQQT4337Z	CAUTION LABEL-C	1
121	PQZSF50M	SPRING ASS'Y, SUB ROLLER-B M' TG	1
122	PQUS228Z	SPRING, LOCK LEVER	1
123	PQJS2L96Z	CONNECTOR,2P	1
124	PQJM120Z	MICROPHONE	1
125	PQHG503Z	RUBBER PARTS, MIC COVER	1

Ref. No.	Part No.	Part Name & Description	Pcs
126	PQ0G2Z	GLASS	1
127	PQHR9451Z	SPACER, HOOK SWITCH	1
128	PQMD9015Z	GEAR CHASSIS-D	1
129	PQJQ28Z	MOTOR, CUTTER	1
130	PQJS2L95Z	CONNECTOR, 2P	1
131	PQHE5025Z	PLASTIC SCREW	3
132	PQDG5040Z	GEAR (FOR CUTTER)	1
133	PQHR9527Z	GUIDE, PAPER DISCHARGE	1
134	PQBD167Z	KNOB, CUTTER LEVER	1
135	PQHM126Z	PAPER GUIDE, UPPER	1
136	PQHM127Y	PAPER GUIDE, LOWER	1
200	PQHR9410Z	SLIDER-L	1
201	PQHR9411Z	SLIDER-R	1
202	PQHR9412Y	COVER,SLIDER	1
203	PQKE71Y	TRAY (LARGE)	1
204	PQKE72Y	TRAY (SMALL)	1
205	PQDG5042Z	GEAR	1
206	PQKE73Z	STACKER (LARGE)	1
207	PQKE80Z	STACKER (SMALL)	1
R950	PQRD250TJ105	RESISTOR, 1MΩ	1
		CASSETTE DECK PARTS	
M1	PQFM9909Z	MOTOR ASS'Y	1
M2	PQFD9913Z	PINCH ROLLER ASS'Y	1
M3	PQFF9909Z	FLYWHEEL ASS'Y	1
M3-1	PQFN35Z	WASHER-C	1
M4	PQFG9904Z	GEAR ASS'Y	1
M4-1	PQFN48Z	WASHER-D	1
M5	PQFR9912Z	TAKEUP REEL TABLE ASS'Y	1
M6	PQFR9913Z	SUPPLY REEL TABLE ASS'Y	1
M7	PQFD82Y	HEAD BASE PLATE	1
M8	PQFW42Z	HEAD BASE	1
M9	PQFS73Z	SPRING, RECORD/PLAYBACK HEAD	1
M10	PQJH1M2Z	RECORD/PLAYBACK HEAD	1
M11	PQJH6M2Z	ERASE HEAD	1
M12	PQFS109Z	SPRING, PINCH ROLLER	1
M13	PQFS110Z	SPRING, HEAD PLATE	1
M14	PQFJ2Z	TERMINAL	1
M15	PQFC9909X	CHASSIS ASS'Y	1
M16	PQFI14Z	RUBBER PARTS, MOTOR SPACER	2
M17	PQUP589Y	P.C. BOARD, REED SWITCH	1
M18	PQJS9B30Z	CONNECTOR, 9P	1
M19	PQFN33Z	WASHER (FOR OIL CUT)	2
M20	PQFB12Z	BELT	1
M21	PQFD64Z	PLATE SPRING	1
M22	PQFS82Z	SPRING, REEL TABLE	2
M23	PQFP126Y	PLUNGER	1
M24	PQHD15Z	SCREW	2
M25	PQFN49Z	WASHER (FOR LOCK OF FLYWHEEL)	1
M26	PQSE91Z	SWITCH, REED	1
M27	ERDS2TJ563	RESISTOR, 56KΩ	1
		ACCESSORIES AND PACKING MATERIALS	
A1	PQJA59Y	CORD, TEL. S	1
A2	PQJA200Z	CORD, POWER ⚠	1
A3	PQJA30V	CORD, HANDSET	1
A4	RT-N30-JT1P	MICRO CASETTE TAPE	1
A5	PQHP416Z	RECORDING PAPER	1
A6	PQQX6195Z	INSTRUCTION BOOK	1
A7	PQQX9752Z	FAX CORRESPONDECE SHEET	1
A8	PQQX9636Z	CARD, DIAL	1
A9	PQQX9634Z	INSTRUCTION BOOK (QUICK REFERENCE) (ENGLISH)	1
A10	PQQX9635Z	INSTRUCTION BOOK (QUICK REFERENCE) (SPANISH)	1
A11	XZB25X34A04	PROTECTION COVER (DOCUMENT)	1
A12	XZB20X20A04	PROTECTION COVER (CORD)	1
A13	PQPH103Z	PROTECTION COVER (TRAY)	2
A14	PQQX9638Z	CARD, 50 STATION	1
A15	PQUS230Z	SPRING	1
A16	XZB10X28A04	PROTECTION COVER (SPRING)	
P1	PQPK1052Z	GIFT BOX	1
P2	PQPN1200Z	ACCESSORY BOX	1
P3	PQPN9056Z	CUSHION, COMPLETE	1
P4	PQPN935Z	HANDLE	1
P5	PQPH92Z	PROTECTION COVER (UNIT)	1

Ref. No.	Part No.	Part Name & Description	Pcs
		DIGITAL BOARD PARTS	
PCB1	PQWP1F90M	DIGITAL BOARD ASS'Y	1
		(ICs)	
IC1	PQVIR6632	IC	1
IC2	PQVIR11493	IC	1
IC3	PQVI9218B448	IC S	1
IC4	PQWIF90M	IC	1
IC5	PQVIHM6264LA	IC S	1
IC6	PQVIHM6264LA	IC S	1
IC7	PQVINJM4558M	IC	1
IC8	PQVIM5195BL	IC	1
IC9	PQVIDC0834CN	IC	1
IC10	PQVIRIP5C62	IC	1
IC11	Not Used		
IC12	PQVIBA12003	IC	1
IC13	PQVIBA12003	IC	1
IC14	PQVILC89066	IC	1
IC15	PQVITC4053BF	IC	1
IC16	PQVINJM082BM	IC	1
IC17	PQVINJM082BM	IC	1
IC18	PQVINJM082BM	IC	1
		(TRANSISTORS)	
Q1	2SD1819A	TRANSISTOR(SI) S	1
Q2	2SB1218A	TRANSISTOR(SI) S	1
Q3	2SB1218A	TRANSISTOR(SI) S	1
Q4	PQVTDTC114K	TRANSISTOR(SI) S	1
Q5	PQVTDTC114K	TRANSISTOR(SI) S	1
Q6	2SB1322	TRANSISTOR(SI)	1
Q7	2SB1322	TRANSISTOR(SI)	1
Q8	PQVTDTC114K	TRANSISTOR(SI) S	1
Q9	2SB1240AR	TRANSISTOR(SI)	1
Q10	2SB1240AR	TRANSISTOR(SI)	1
Q11	2SD1994A	TRANSISTOR(SI)	1
Q12	2SD1819A	TRANSISTOR(SI) S	1
Q201	2SD1819A	TRANSISTOR(SI) S	1
Q202	2SB1240AR	TRANSISTOR(SI)	1
Q203	2SD1819A	TRANSISTOR(SI) S	1
Q204	2SD1819A	TRANSISTOR(SI) S	1
		(DIODES)	
D1	MA4051	DIODE(SI)	1
D2	Not Used		
D3	Not Used		
D4	MA700A	DIODE(SI)	1
D5	Not Used		
D6	MA4027M	DIODE(SI)	1
D7	Not Used		
D8	Not Used		
D9	1SS131	DIODE(SI)	1
D10	Not Used		
D11	MA7200	DIODE(SI)	1
D12	1SS147	DIODE(SI)	1
D13	MA7200	DIODE(SI)	1
D14	1SS147	DIODE(SI)	1
D15	PQVD1SR354A	DIODE(SI)	1
D16	MA4270	DIODE(SI)	1
D17	Not Used		
D18	Not Used		
D19	Not Used		
D20	1SS131	DIODE(SI)	1
D201-206	1SS131	DIODE(SI)	6
		(COMPONENTS COMBINATIONS)	
RA1	PQRSLD8X472J	RESISTOR ARRAY	1
RA4	PQRSLD4X103J	RESISTOR ARRAY	1
LP2,3	EXCEMT220B	NOISE FILTER	2
LP4	EXCEMT102B	NOISE FILTER	1

Ref. No.	Part No.	Value		Pcs
		(CRYSTAL OSCILLATOR)		
X1	PQVCL2400N3Z	CRYSTAL OSCILLATOR		1
X2	PQVCL3276N6Z	CRYSTAL OSCILLATOR		1
		(CAPACITORS)		
C1	PQCUV1H180JC	18P		1
C2	PQCUV1H390JC	39P		1
C3	PQCUV1E104MD	0.1	S	1
C4	PQCUV1H102J	1000P		1
C5	PQCUV1H102J	1000P		1
C6	Not Used			
C7	PQCUV1H180JC	18P		1
C8	PQCUV1H150JC	15P		1
C9	ECEA1CKS100	10		1
C10	Not Used			
C11	Not Used			
C12	PQCUV1E104MD	0.1		1
C13	PQCUV1E104MD	0.1	S	1
C14	PQCUV1E104MD	0.1	S	1
C15	PQCUV1H103KB	0.01		1
C16	PQCUV1H103KB	0.01		1
C17	PQCUV1H101JC	100P		1
C18	ECEA1EU101	100		1
C19	PQCUV1H472KB	0.0047		1
C20	PQCUV1E104MD	0.1		
C21	PQCUV1E104MD	0.1		1
C22	PQCUV1E104MD	0.1		1
C23	PQCUV1E104MD	0.1		1
C24	PQCUV1E104MD	0.1		1
C25	PQCUV1E104MD	0.1		1
C26	Not Used			
C27	ECEA1VKA330	33		1
C28	Not Used			
C29	ECEA1HKSR33	0.33		1
C30	PQCUV1H020CC	2P		1
C31	PQCUV1H470JC	47P		1
C32	PQCUV1H103KB	0.01		1
C33-49	Not Used			
C50	PQCUV1E104MD	0.1		1
C51	PQCUV1E104MD	0.1		1
C52	PQCUV1E104MD	0.1		1
C53	ECEA1HKS010	1		1
C54	ECEA1CKS100	10		1
C55	PQCUV1E104MD	0.1		1
C56	PQCUV1E104MD	0.1		1
C57	PQCUV1E104MD	0.1		1
C58	PQCUV1E104MD	0.1		1
C59	PQCUV1E104MD	0.1		1
C60	Not Used			
C61	PQCUV1E104MD	0.1		1
C62	PQCUV1E104MD	0.1		1
C63	PQCUV1E104MD	0.1		1
C64	PQCUV1E104MD	0.1		1
C65	PQCUV1E104MD	0.1		1
C66	PQCUV1E104MD	0.1		1
C67	PQCUV1E104MD	0.1		1
C68	PQCUV1E104MD	0.1		1
C69	ECEA1VKA330	33		1
C70	PQCUV1E104MD	0.1		1
C71	PQCUV1E104MD	0.1		1
C72	PQCUV1E104MD	0.1		1
C73	PQCUV1E104MD	0.1		1
C74	ECEA1VKA330	33		1
C75	ECEA1VKA330	33		1
C76	ECEA0JK221	220		1
C77	ECEA0JK221	220		1
C78	ECEA1VKA330	33		1
C79	ECEA1EU101	100	S	1
C80	ECEA1EU101	100	S	1
C81	Not Used			
C82	PQCUV1E104MD	0.1		1
C83	PQCUV1E104MD	0.1		1
C84	PQCUV1H103KB	0.01		1
C85	PQCUV1H103KB	0.01		1
C86	PQCUV1E104MD	0.1		1
C87	PQCUV1H153KB	0.015		1
C88	PQCUV1H331JC	330P		1

Part No.	Part No.	Value	Pcs
C89	PQCUV1E104MD	0.1	1
C90	PQCUV1E104MD	0.1	1
C91	PQCUV1E104MD	0.1	1
C92	PQCUV1E104MD	0.1	1
C93	PQCUV1E104MD	0.1	1
C202	PQCUV1H101JC	100P	1
C210	PQCBC1H470JL	47P	1
		(RESISTORS)	
R1	PQ4R10XJ103	10K	1
R2	ERDS2TJ271	270	1
R3	PQ4R10XJ103	10K	1
R4	PQ4R10XF1002	10K	1
R5	PQ4R10XF3652	36.5K	1
R6	ERDS2TJ3R3	3.3	1
R7	PQ4R10XJ272	2.7K	1
R8	PQ4R10XF8662	86.6K	1
R9	PQ4R10XJ683	68K	1
R10	PQ4R10XJ563	56K	1
R11	ER016CKF8662	86.6K	1
R12	PQ4R10XJ222	2.2K	1
R13	PQ4R10XJ472	4.7K	1
R14	PQ4R10XJ472	4.7K	1
R15	PQ4R10XJ222	2.2K	1
R16	Not Used		
R17	PQ4R10XJ103	10K	1
R18	PQ4R10XJ392	3.9K	1
R19	Not Used		
R20	PQ4R10XJ104	100K	1
R21	PQ4R10XJ103	10K	1
R22	Not Used		
R23	PQ4R10XJ222	2.2K	1
R24	PQ4R10XJ103	10K	1
R25	PQ4R10XJ104	100K	1
R26	PQ4R10XJ104	100K	1
R27	PQ4R10XJ104	100K	1
R28	ER016CKF2202	2.2K	1
R29	PQ4R10XJ473	47K	1
R30	PQ4R10XJ473	47K	1
R31	ER016CKF1501	1.5K	1
R32	PQ4R10XJ473	47K	1
R33	PQ4R10XJ472	4.7K	1
R34	PQ4R10XJ103	10K	1
R35	PQ4R10XJ103	10K	1
R36	PQ4R10XJ103	10K	1
R37	PQ4R10XJ332	3.3K	1
R38	PQ4R10XJ332	3.3K	1
R39	Not Used		
R40	ERDS2TJ331	330	1
R41	PQ4R10XJ222	2.2K	1
R42-45	Not Used		
R46	PQ4R10XJ103	10K	1
R47	PQ4R10XF2701	2.7K	1
R48	PQ4R10XF1801	1.8K	1
R49	PQ4R10XJ272	2.7K	1
R50	PQ4R10XJ101	100	1
R51	PQ4R10XJ272	2.7K	1
R52	PQ4R10XJ103	10K	1
R53	ERDS1TJ222	2.2K	1
R54	PQ4R10XJ103	10K	1
R55	ERDS1TJ222	2.2K	1
R56	PQ4R10XJ473	47K	1
R57	ERDS1TJ222	2.2K	1
R58	Not Used		
R59	ERDS2TJ103	10K	1
R60	PQ4R10XJ103	10K	1
R61	ERDS2TJ122	1.2K	1
R62	PQ4R10XJ103	10K	1
R63	PQ4R10XJ103	10K	1
R64	PQ4R10XJ563	56K	1
R65	PQ4R10XJ563	56K	1
R66	PQ4R10XJ563	56K	1
R67	PQ4R10XJ563	56K	1
R68	PQ4R10XJ563	56K	1
R69	PQ4R10XJ563	56K	1
R70	PQ4R10XJ682	6.8K	1

Part No.	Part No.	Part Name & Description	Pcs
R71	PQ4R10XJ682	6.8K	1
R72	PQ4R10XJ682	6.8K	1
R73	PQ4R10XJ682	6.8K	1
R74	PQ4R10XJ682	6.8K	1
R75	PQ4R10XJ682	6.8K	1
R76	PQ4R10XJ470	47	1
R77	PQ4R10XJ470	47	1
R78-81	Not Used		
R82	PQ4R10XJ473	47K	1
R83	PQ4R10XJ103	10K	1
R84	PQ4R10XJ222	2.2K	1
R85	PQ4R10XJ103	10K	1
R86	PQ4R10XJ103	10K	1
R87	PQ4R10XJ391	390	1
R88	PQ4R10XJ102	1K	1
R89	PQ4R10XJ102	1K	1
R90	PQ4R10XJ103	10K	1
R91	PQ4R10XJ103	10K	1
R92	PQ4R10XJ103	10K	1
R93	PQ4R10XJ103	10K	1
R94	PQ4R10XJ103	10K	1
R95	PQ4R10XJ103	10K	1
R96	PQ4R10XJ473	47K	1
R97-99	Not Used		
R100	PQ4R10XJ100	10	1
R101	PQ4R10XJ272	2.7K	1
R102	Chip Jumper	0Ω	1
R103	Not Used		
R104	Chip Jumper	0Ω	1
R105-108	Not Used		
R109	PQ4R10XJ220	22	1
R110	PQ4R10XJ220	22	1
R111	PQ4R10XJ220	22	1
R112	PQ4R10XJ220	22	1
R113	PQ4R10XF1801	1.8K	1
R114	PQ4R10XJ103	10K	1
R115	PQ4R10XJ332	3.3K	1
R116	PQ4R10XJ272	2.7K	1
R117	PQ4R10XJ100	10	1
R118	PQ4R10XJ391	390	1
R119	PQ4R10XJ391	390	1
R120	PQ4R10XJ101	100	1
R121	Not Used		
R122	PQ4R10XJ470	47	1
R201	PQ4R10XJ473	47K	1
R202	Not Used		
R203	PQ4R10XJ222	2.2K	1
R204	PQ4R10XJ222	2.2K	1
R205	PQ4R10XJ222	2.2K	1
R206	PQ4R10XJ101	100	1
R207	PQ4R10XJ102	1K	1
R208	PQ4R10XJ151	150	1
R209	PQ4R10XJ222	2.2K	1
R210	ERDS2TJ103	10K	1
R211	ERDS2TJ182	1.8K	1
R212	ERD21TJ560	56	1
		(BATTERY & CONNECTORS)	
BA1	BR2032/1HF1	LITHIUM BATTERY	1
CN1	PQJP17G72Z	CONNECTOR, 17P	1
CN2	PQJP16G72Z	CONNECTOR, 16P	1
CN3	PQJP9G74Z	CONNECTOR, 9P	1
CN4	PQJP8D94Z	CONNECTOR, 8P	1
CN5	PQJS18X59Z	CONNECTOR, 18P	1
CN6	PQJP11D70Z	CONNECTOR, 11P	1
CN7	PQJP6D94Z	CONNECTOR, 6P	1
CN8	PQJP7D94Z	CONNECTOR, 7P	1
CN9	PQJP2D68Z	CONNECTOR, 2P	1
CN10	PQJP2D107Z	CONNECTOR, 2P	1
CN11	PQJP3D94Z	CONNECTOR, 3P	1
CN12	PQJP4D94Z	CONNECTOR, 4P	1
CN13	PQJP4D94Z	CONNECTOR, 4P	1
CN14	PQJP2D70Z	CONNECTOR, 2P	1

Part No.	Part No.	Part Name & Description		Pcs
		ANALOG BOARD PARTS		
PCB2	PQWP2F50M	ANALOG BOARD ASS'Y (NLA)		1
		(ICs)		
IC3	PQVIM3074AE1	IC		1
IC4	PQVINJM4558D	IC		1
IC5	PQVITMS3477	IC		1
IC6	PQVITM41256A	IC	S	1
IC7	PQVITM41256A	IC	S	1
IC8	PQVINJM4558D	IC		1
IC9	PQVIPD4066BC	IC	S	1
IC10	PQVINJ4053BD	IC		1
IC11	AN6161K	IC		1
IC12	PQVIBA6220	IC		1
IC13	PQVINJM4558D	IC		1
IC14	PQVINJM4558D	IC		1
IC15	PQVI672191F	IC		1
IC16	PQVINJM4558D	IC		1
		(TRANSISTORS)		
Q1	2SA1626	TRANSISTOR(SI)	⚠	1
Q2	2SD662B	TRANSISTOR(SI)	⚠	1
Q3	2SC2235	TRANSISTOR(SI)	⚠	1
Q4	PQVTBB1A4A	TRANSISTOR(SI)		1
Q5	Not Used			
Q6	PQVTDTC143E	TRANSISTOR(SI)		1
Q7	Not Used			
Q8	Not Used			
Q9	2SD1819A	TRANSISTOR(SI)	S	1
Q10	Not Used			
Q11	PQVTBB1A4A	TRANSISTOR(SI)		1
Q12	2SD1819A	TRANSISTOR(SI)	S	1
Q13	2SD1819A	TRANSISTOR(SI)	S	1
Q14	2SB1218A	TRANSISTOR(SI)	S	1
Q15	Not Used			
Q16	2SD1819A	TRANSISTOR(SI)	S	1
Q17	2SD1819A	TRANSISTOR(SI)	S	1
Q18	2SD1819A	TRANSISTOR(SI)	S	1
Q19	PQVTDTC143E	TRANSISTOR(SI)		1
Q20	2SD1994A	TRANSISTOR(SI)		1
Q21	2SB1322	TRANSISTOR(SI)		1
Q22	2SB1322	TRANSISTOR(SI)		1
Q23	2SC1740S	TRANSISTOR(SI)		1
Q24	2SC1652	TRANSISTOR(SI)		1
Q25	2SC1652	TRANSISTOR(SI)		1
Q26	2SB1322	TRANSISTOR(SI)		1
Q27	2SB1322	TRANSISTOR(SI)		1
Q28	PQVTDTC143E	TRANSISTOR(SI)		1
Q29	2SD1994A	TRANSISTOR(SI)		1
Q30	PQVTDTC143E	TRANSISTOR(SI)		1
Q31	2SD2136	TRANSISTOR(SI)		1
Q39	PQVTDTC143E	TRANSISTOR(SI)		1
		(DIODES)		
D8	1S1588	DIODE(SI)		1
D9	Not Used			
D10	Not Used			
D11	PQVDHZS2B1	DIODE(SI)	⚠	1
D12-15	Not Used			
D16	MA4056	DIODE(SI)		1
D17	MA4056	DIODE(SI)		1
D18	MA4068	DIODE(SI)		1
D19-22	1SS131	DIODE(SI)		4
D23	1S1588	DIODE(SI)		1
D24-29	1SS131	DIODE(SI)		6
D30	PQVDS1YB40F1	DIODE(SI)	⚠	1
D31	Not Used			
D32 -35	1SS131	DIODE(SI)		4
		(COILS)		
F1,2,3, L1-4	PQLE106	CHOKE COIL	⚠	7
L5,6	PQLQZK680K	CHOKE COIL	⚠	2

Part No.	Part No.	Value	Pcs
		(PHOTO ELECTRIC TRANSDUCERS)	
PC1	PQVIPC814K	PHOTO COUPLER ⚠	1
PC2,3	PQVIPC817CD	PHOTO COUPLER ⚠	2
		(RELAY)	
RLY1	PQSL61Z	RELAY ⚠	1
		(SWITCHES)	
S1	PQSS2A27Z	SWITCH, DIALING MODE	1
S2	ESE14A211	SWITCH, HOOK	1
S3	PQSS3B10Z	SWITCH, RINGER	1
		(TRANSFORMER)	
T1	ETA14Y85AY	CALL TRANSFORMER ⚠	1
		(VARIABLE RESISTORS)	
VR1	EVNDXAA03B23	SEMI-FIXED, 2KΩ (B)	1
VR3	EVNDXAA03B52	SEMI-FIXED, 500Ω (B)	1
VR4	Not Used		
VR5	PQVAL103A14A	VOLUME CONTROL, 10KΩ (A)	1
		(FILTERS)	
X1	PQVFCSB328D1	CERAMIC FILTER	1
X2	Not Used		
X3	PQVBA4.19M2	CERAMIC FILTER	1
		(VARISTOR)	
ZNR1	ERZC07DK820	VARISTOR ⚠	1
SA1	PQVDDDA401M	VARISTOR (SURGE ABSORBER) ⚠	1
SA2-5	PQVDSAE310F1	VARISTOR (SURGE ABSORBER) ⚠	4
		(CAPACITORS)	
C1	ECQE2E224JZ	0.22 ⚠	1
C2-5	Not Used		
C6	ECKD2H681KB	680P ⚠	1
C7	ECKD2H681KB	680P ⚠	1
C8	ECKDKC222KB	0.0022 ⚠ S	1
C9	Not Used		
C10	Not Used		
C11	Not Used		
C12	ECEA1HU100	10 ⚠	1
C13	Not Used		
C14	Not Used		
C15	PQCUV1H121JC	120P	1
C16	PQCUV1C683MD	0.068	1
C17	Not Used		
C18	Not Used		
C19	PQCUV1E333MD	0.033	1
C20	PQCUV1H680JC	68P	1
C21	PQCUV1C683MD	0.068	1
C22	ECEA1HU220	22 ⚠	1
C23	ECKD1H102JA	0.001	1
C24	PQCUV1H470JC	47P	1
C25-27	Not Used		
C28	PQCUV1H103KB	0.01	1
C29	PQCUV1E104MD	0.1	1
C30	PQCUV1E104MD	0.1 S	1
C31	ECEA1EU470	47 S	1
C32	PQCUV1H102J	0.001 ⚠	1
C33-36	Not Used		
C37	ECEA1AU101	100 S	1
C38	ECEA1HU010	1	1
C39	Not Used		
C40	Not Used		
C41	PQCUV1E104MD	0.1	1
C42	ECEA1HU100	10 S	1
C43	ECEA1HUR22	0.22	1
C44	ECEA1HU100	10 S	1
C45	PQCUV1H153KB	0.015	1
C46	PQCUV1C683MD	0.068	1
C47	PQCUV1H103KB	0.01	1
C48	PQCUV1H103KB	0.01	1

Part No.	Part No.	Value	Pcs
C49	PQCUV1F104MD	0.1	1
C50	ECEA1HU010	1	1
C51	Not Used		
C52	PQCUV1H103KB	0.01	1
C53	PQCUV1H103KB	0.01	1
C54	PQCUV1H103KB	0.01	1
C55	ECEA1AU101	100 S	1
C56	PQCUV1H152KB	0.0015	1
C57	PQCUV1H472KB	0.0047	1
C58	PQCUV1E104MD	0.1	1
C59	Not Used		
C60	Not Used		
C61	PQCUV1H103KB	0.01	1
C62	PQCUV1E104MD	0.1	1
C63	PQCUV1E104MD	0.1	1
C64	PQCUV1H562KB	0.0056	1
C65	ECEA1AU221	220 S	1
C66	PQCUV1E104MD	0.1	1
C67	PQCUV1C683MD	0.068	1
C68	PQCUV1E333MD	0.033	1
C69	ECEA1HNR47S	0.47	1
C70	ECUV1H104MD	0.1 S	1
C71	ECEA1EU101	100 S	1
C72	ECEA1CU221	220	1
C73	ECUV1H104MD	0.1 S	1
C74	ECEA1CU221	220	1
C75	PQCUV1E104MD	0.1	1
C76	ECEA0JKS101	100	1
C77	PQCUV1E104MD	0.1	1
C78	Not Used		
C79	Not Used		
C80	PQCUV1H103KB	0.01	1
C81	PQCUV1H103KB	0.01	1
C82	ECEA1HU010	1	1
C83	Not Used		
C84	PQCUV1H103KB	0.01	1
C85	PQCUV1H103KB	0.01	1
C86	PQCUV1H681JC	680P	1
C87	PQCUV1C683MD	0.068	1
C88	ECEA0JU102	1000	1
C89	PQCUV1E104MD	0.1	1
C90	ECEA1AU221	220 S	1
C91	PQCUV1H103KB	0.01	1
C92	PQCUV1H391JC	390P	1
C93	ECEA1HU010	1	1
C94	PQCUV1E104MD	0.1	1
C95	Not Used		
C96	ECEA1HUR22	0.22	1
C97	PQCUV1H223KB	0.022	1
C98	PQCUV1C683MD	0.068	1
C99	Not Used		
C100	Not Used		
C101	PQCUV1E104MD	0.1	1
C102	ECUV1H104MD	0.1	1
C103	PQCUV1E104MD	0.1	1
C104	PQCUV1E104MD	0.1	1
C105	Not Used		
C106	PQCUV1H103KB	0.01	1
C107	ECEA1HU4R7	4.7	1
C108	PQCUV1H223KB	0.022 S	1
C109	ECEA1HU100	10 S	1
C110	ECEA1HU100	10 S	1
C111	ECEA0JU220	22	1
C112	ECEA1HU010	1	1
C113	PQCUV1H103KB	0.01	1
C114-116	Not Used		
C117	ECQG1H103JZ	0.01	1
C118	PQCUV1H471JC	470P	1
C119	PQCUV1C683MD	0.068	1
C120	PQCUV1H471JC	470P	1
C121	ECEA1AU101	100 S	1
C122	PQCUV1E104MD	0.1	1
C123	PQCUV1C683MD	0.068	1
C124	PQCUV1C683MD	0.068	1
C125	PQCUV1H331JC	330P	1
C126	PQCUV1H331JC	330P	1
C127	Not Used		
C128	ECEA1AU101	100 S	1

Part No.	Part No.	Value		Pcs
C129	PQCUV1C683MD	0.068		1
C130	ECEA1AU221	220	S	1
C131	PQCUV1H223KB	0.022		1
C132	Not Used			
C133	PQCUV1H103KB	0.01		1
C134	ECEA1AU101	100	S	1
C135	ECQP1H682GZ	0.0068		1
C136	ECQP1H682GZ	0.0068		1
C137	ECQP1H682GZ	0.0068		1
C138-143	Not Used			
C144	ECEA0JKS101	100		1
C145	PQCUV1E104MD	0.1		1
C146	PQCUV1H152KB	0.0015		1
C147-150	Not Used			
C151	ECEA1HU100	10		1
C152	PQCUV1C224ZF	0.22		1
C153	Not Used			
C154	Not Used			
C155	ECEA1AU101	100	S	1
C156	Not Used			
C157	ECQP1H682GZ	0.0068		1
C158	Not Used			
C159	PQCUV1E104MD	0.1		1
C160	Not Used			
C161	PQCUV1H103KB	0.01		1
C162-170	Not Used			
C185	ECEA1AU101	100	S	1
C300	ECEA1AU101	100	S	1
C301	ECEA1AU221	220	S	1
C302	PQCUV1E104MD	0.1		1
C303	PQCUV1E473MD	0.047		1
C304	PQCUV1H680JC	68P		1
C305	PQCUV1H103KB	0.01		1
C306	PQCUV1H103KB	0.01		1
C700	PQCUV1E333MD	0.033		1
C701	PQCUV1H103KB	0.01		1
		(RESISTORS)		
R1	ERD25TJ473	47K	⚠	1
R2-6	Not Used			
R7	PQ4R10XJ473	47K		1
R8	Not Used			
R9	PQ4R10XJ104	100K	⚠	1
R10	PQ4R10XJ472	4.7K	⚠	1
R11	PQ4R10XJ154	150K	⚠	1
R12	PQ4R10XJ564	560K	⚠	1
R13	ERDS2TJ102	1K		1
R14	PQ4R10XJ683	68K		1
R15	Not Used			
R16	ERDS2TJ103	10K	⚠	1
R17	ERDS2TJ472	4.7K	⚠	1
R18	Not Used			
R19	Not Used			
R20	PQ4R10XJ271	270		1
R21	PQ4R10XJ182	1.8K		1
R22	Not Used			
R23	PQ4R10XJ182	1.8K		1
R24	PQ4R10XJ473	47K		1
R25	PQ4R10XJ123	12K		1
R26	ER016CKF5360	536		1
R27	PQ4R10XJ472	4.7K		1
R28	PQ4R10XJ821	820		1
R29	PQ4R10XJ274	270K		1
R30	PQ4R10XJ222	2.2K		1
R31	PQ4R10XJ104	100K		1
R32	ER016CKF1541	1.54K		1
R33	PQ4R10XJ154	150K		1
R34	PQ4R10XJ104	100K		1
R35	PQ4R10XJ104	100K		1
R36	ER016CKF1541	1.54K		1
R37	ER016CKF6190	619		1
R38	PQ4R10XJ104	100K		1
R39	PQ4R10XJ224	220K		1
R40	PQ4R10XJ223	22K		1
R41	Not Used			
R42	PQ4R10XJ104	100K		1
R43	Not Used			

Part No.	Part No.	Value	Pcs
R44	PQ4R10XJ684	680K	1
R45-48			
R49	PQ4R10XJ473	47K	1
R50	Not Used		
R51	Not Used		
R52-54	Not Used		
R55	PQ4R10XJ472	4.7K	1
R56	Not Used		
R57	Not Used		
R58	Chip Jumper	0Ω	1
R59	Not Used		
R60	PQ4R10XJ101	100	1
R61	PQ4R18XJ100	10	1
R62	PQ4R10XJ103	10K	1
R63	PQ4R10XJ222	2.2K	1
R64	PQ4R10XJ182	1.8K	1
R65	PQ4R10XJ222	2.2K	1
R66	ERDS2TJ564	560K	1
R67	ERDS2TJ105	1M	1
R68	PQ4R10XJ682	6.8K	1
R69	PQ4R10XJ335	3.3M	1
R70	PQ4R10XJ154	150K	1
R71	PQ4R10XJ185	1.8M	1
R72	PQ4R10XJ394	390K	1
R73	PQ4R10XJ104	100K	1
R74	Not Used		
R75	Not Used		
R76	PQ4R10XJ335	3.3M	1
R77	PQ4R10XJ225	2.2m	1
R78	PQ4R10XJ475	4.7M	1
R79	PQ4R10XJ222	2.2K	1
R80	ERDS2TJ473	47K	1
R81	PQ4R10XJ683	68K	1
R82	PQ4R10XJ272	2.7K	1
R83	PQ4R10XJ473	47K	1
R84	PQ4R10XJ223	22k	1
R85	PQ4R18XJ223	22K	1
R86	PQ4R10XJ272	2.7K	1
R87	PQ4R10XJ153	15K	1
R88	PQ4R10XJ184	180K	1
R89	PQ4R10XJ393	39K	1
R90	PQ4R10XJ272	2.7K	1
R91	PQ4R10XJ222	2.2K	1
R92	PQ4R10XJ103	10K	1
R93	PQ4R10XJ103	10K	1
R94	ERDS2TJ391	390	1
R95	PQ4R10XJ103	10K	1
R96	PQ4R10XJ682	6.8K	1
R97	PQ4R10XJ473	47K	1
R98	PQ4R10XJ102	1K	1
R99	Not Used		
R100	PQ4R10XJ104	100K	1
R101	PQ4R10XJ223	22K	1
R102	PQ4R10XJ330	33	1
R103	Not Used		
R104	PQ4R10XJ124	120K	1
R105	PQ4R10XJ103	10K	1
R106	ERDS2TJ472	4.7K	1
R107	ERDS2TJ681	680	1
R108	ERD25TJ120	12	1
R109	PQ4R10XJ103	10K	1
R110	ERDS2TJ221	220	1
R111	PQ4R10XJ473	47K	1
R112	PQ4R10XJ473	47K	1
R113	PQ4R10XJ471	470	1
R114	PQ4R10XJ471	470	1
R115	PQ4R10XJ473	47K	1
R116	ERDS2TJ151	150	1
R117	PQ4R10XJ221	220	1
R118	ERDS2TJ102	1K	1
R119	ERDS2TJ103	10K	1
R120	Not Used		
R121	PQ4R10XJ122	1.2K	1
R122	PQ4R10XJ102	1K	1
R123	PQ4R10XJ394	390K	1
R124	PQ4R10XJ563	56K	1
R125	PQ4R10XJ180	18	1
R126	PQ4R10XJ183	18K	1

Part No.	Part No.	Part Name & Description	Pcs
R127	PQ4R10XJ121	120	1
R128	PQ4R10XJ334	330K	1
R129	PQ4R10XJ222	2.2K	1
R130	PQ4R10XJ224	220K	1
R131	PQ4R10XJ104	100K	1
R132	PQ4R10XJ563	56K	1
R133	PQ4R10XJ563	56K	1
R134	PQ4R10XJ822	8.2K	1
R135	ERDS2TJ124	120K	1
R136	PQ4R10XJ682	6.8K	1
R137	PQ4R18XJ103	10K	1
R138	PQ4R10XJ2R2	2.2K	1
R139	PQ4R10XJ222	2.2K	1
R140	PQ4R10XJ103	10K	1
R141	PQ4R10XJ102	1K	1
R142	PQ4R10XJ103	10K	1
R143	ERDS2TJ103	10K	1
R144	PQ4R10XJ473	47K	1
R145	ERDS2TJ330	33	1
R146	PQ4R10XJ473	47K	1
R147	PQ4R10XJ333	27K	1
R148	Chip Jumper	0Ω	1
R149	PQ4R10XJ104	100K	1
R150	PQ4R10XJ223	22K	1
R151	PQ4R10XJ562	5.6K	1
R152	PQ4R10XJ152	1.5K	1
R153	PQ4R10XJ103	10K	1
R154	PQ4R18XJ103	10K	1
R155	PQ4R10XJ105	1M	1
R156	PQ4R10XJ681	680	1
R157	PQ4R10XJ224	220K	1
R158	PQ4R10XJ472	4.7K	1
R159	PQ4R10XJ105	1M	1
R160	PQ4R10XJ222	2.2K	1
R161	PQ4R10XJ152	1.5K	1
R162	PQ4R10XJ393	39K	1
R163	Not Used		
R164	ER016CKF21281	21.28K	1
R165	ER016CKF21281	21.28K	1
R166	ER016CKF10641	10.64K	1
R167	PQ4R10XJ474	470K	1
R168-171	Not Used		
R172	ERDS2TJ472	4.7K	1
R173	PQ4R10XJ473	47K	1
R174	PQ4R10XJ103	10K	1
R175	PQ4R10XJ333	33K	1
R176	Not Used		
R177	PQ4R10XJ103	10K	1
R178	ERD25TJ5R6	5.6 ⚠	1
R179	Not Used		
R180	PQ4R10XJ472	4.7K	1
R181-187	Not Used		
R188	PQ4R10XJ223	22K	1
R189	PQ4R10XJ473	47K	1
R190-193	Not Used		
R194	PQ4R10XJ472	4.7K	1
R195	PQ4R10XJ105	1M	1
R196	Not Used		
R197	PQ4R10XJ472	4.7K	1
R198	Not Used		
R199	PQ4R10XJ470	47	1
R200	Not Used		
R201	PQ4R10XJ101	100	1
R202	PQ4R10XJ101	100	1
R203	PQ4R10XJ122	1.2K	1
R204	PQ4R10XJ684	680K	1
R205	PQ4R10XJ152	1.5K	1
R206-209	Not Used		
R210	PQ4R10XJ473	47K	1
R301	ERDS2TJ682	6.8K	1
R501	PQ4R10XJ473	47K	1
R502	PQ4R10XJ224	220K	1
J35	PQ4R10XJ472	4.7K	

Part No.	Part No.	Part Name & Description	Pcs
		(CONNECTORS & JACK)	
CN4	PQJS17B30Z	CONNECTOR, 17P	1
CN5	PQJS16B32Z	CONNECTOR, 16P	1
CN6	PQJP2G43Z	CONNECTOR, 2P	1
CN7	PQJP2G71Z	CONNECTOR, 2P	1
CN9	PQJP9D93Z	CONNECTOR, 9P	1
TEL JACK	PQJJ2TAA1Z	JACK, TELEPHONE ⚠	1
H/S JACK	PQJJ1TB18Z	JACK, HANDSET	1
		OPERATION AND SENSOR BOARD PARTS	
PCB3	PQWP3F90M	OPERATION & SENSOR BOARD ASS'Y (NLA)	1
		(ICs)	
IC601	PQVISN7H258S	IC	1
IC602	PQVISN7H138S	IC	1
IC603	PQVISN7S38S	IC	1
IC604	PQVIPD7225GB	IC	1
		(TRANSISTORS)	
Q601	2SA1602F	TRANSISTOR (SI)	1
Q602	2SA1602F	TRANSISTOR (SI)	1
Q603	2SA1602F	TRANSISTOR (SI)	1
Q604	2SA1602F	TRANSISTOR (SI)	1
		(DIODES)	
D601	1S1588	DIODE (SI)	1
D602	1S1588	DIODE (SI)	1
D603	1S1588	DIODE (SI)	1
D604	1SS131	DIODE (SI)	1
D605	1S1588	DIODE (SI)	1
D606	1SS131	DIODE (SI)	1
D607	1SS131	DIODE (SI)	1
D608	1SS131	DIODE (SI)	1
LED601	LN38GP	LED S	1
LED602	LN38GP	LED S	1
LED603	LN38GP	LED S	1
LED604	LN086WP38	LED	1
LED605	LN28RPXTA3	LED	1
LED606	LN28RPXTA3	LED	1
LRD607	PQVDGL1D11E	LED	1
LED608	PQVDGL1D11E	LED	1
LED609	LN38GP	LED S	1
LED610	LN38GP	LED S	1
LED611	PQVDGL1C11C	LED	1
LED612	LN38GP	LED S	1
LED613	LN38GP	LED S	1
LED614	LN38GP	LED S	1
LED615	LN38GP	LED S	1
		(VARIAVLE RESISTOR)	
VR601	PQVU0811CB23	Semi-Fixed, 2kΩ (B)	1
		(RESISTORS)	
R601	PQ4R10XJ680	68	1
R602	PQ4R10XJ680	68	1
R603	PQ4R10XJ680	68	1
R604	ERD25TJ221	220	1
R605	PQ4R10XJ102	1K	1
R606	ERD25TJ222	2.2K	1
R607	PQ4R10XJ102	1K	1
R608	ERD25TJ222	2.2K	1
R609	PQ4R10XJ102	1K	1
R610	ERD25TJ222	2.2K	1
R611	ERDS2TJ222	2.2K	1
R612	ERDS2TJ103	10K	1
R613	ERDS2TJ103	10K	1
R614	ERD25TJ103	10K	1
R615	ERDS2TJ103	10K	1
R616	ERDS2TJ103	10K	1
R617	ERDS2TJ103	10K	1
R618	ERDS2TJ103	10K	1

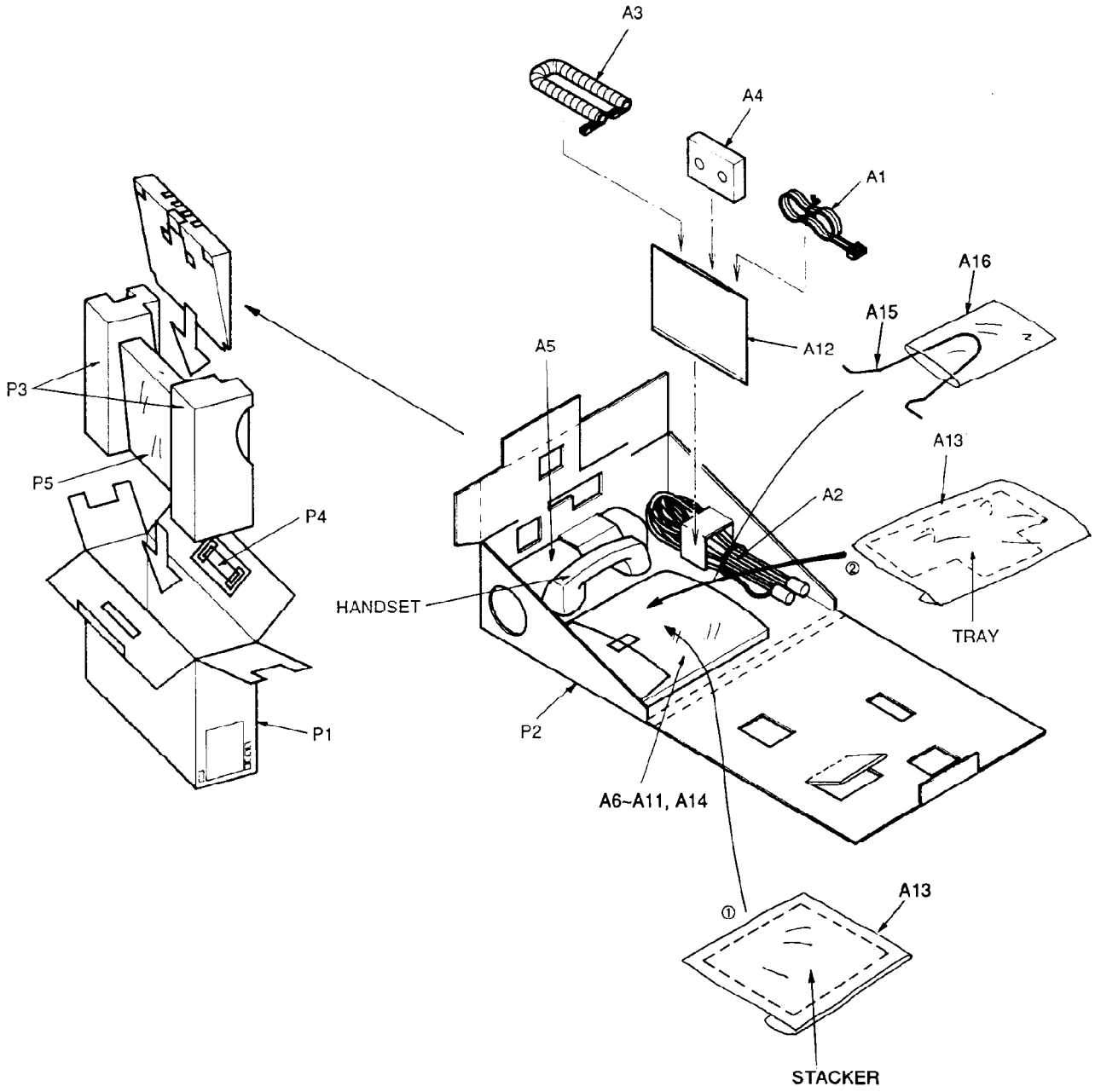
Part No.	Part No.	Part Name & Description		Pcs
R619	ERDS2TJ103	10K		1
R620	PQ4R10XJ102	1K		1
R621	PQ4R10XJ102	1K		1
R622	PQ4R10XJ102	1K		1
R623	PQ4R10XJ184	180K		1
R624	PQ4R10XJ103	10K		1
R625	PQ4R10XJ680	68		1
R626	ERDS2TJ820	82		1
R627	PQ4R10XJ820	82		1
R628	ERDS2TJ151	150		1
R629	ERDS2TJ331	330		1
R630	ERDS2TJ151	150		1
R631	PQ4R10XJ102	1K		1
R632	PQ4R10XJ102	1K		1
R633	PQ4R10XJ102	1K		1
R634	ERDS2TJ151	150		1
R635	ERDS2TJ680	68		1
R636	ERDS2TJ680	68		1
R701	ERDS2TJ331	330		1
R702	ERDS2TJ331	330		1
R801	ERDS2TJ331	330		1
R802	ERDS2TJ331	330		1
		(CAPACITORS)		
C601	PQCUV1E104MD	0.1		1
C602	PQCUV1E104MD	0.1		1
C603	PQCUV1E104MD	0.1		1
C604	PQCUV1H102J	1000P		1
C605	PQCUV1H102J	1000P		1
C606	PQCUV1E104MD	0.1		1
C607	Not Used			
C608	PQCUV1E104MD	0.1		1
C609	PQCUV1H102J	1000P		1
		(SWITCHES)		
SW401	PQST2A05Z1	SWITCH, CUTTER POSITION		
S601	EVQ12405K	SWITCH, M1		1
S602	EVQ12405K	SWITCH, M3		1
S603	EVQ12405K	SWITCH, M2		1
S604	EVQ12405K	SWITCH, M4		1
S605	EVQ12405K	SWITCH, M5		1
S606	EVQ12405K	SWITCH, M6		1
S607	EVQ12405K	SWITCH, M7		1
S608	EVQ12405K	SWITCH, M8		1
S609	EVQ12405K	SWITCH, M9		1
S610	EVQ12405K	SWITCH, M10		1
S611	PQSH1A33Z	SWITCH, START/COPY	S	1
S612	PQSH1A33Z	SWITCH, STOP/CLEAR	S	1
S613	EVQ12405K	SWITCH, POLLING		1
S614	EVQ12405K	SWITCH, RECV		1
S615	EVQ12405K	SWITCH, DARK		1
S616	EVQ12405K	SWITCH, H.T		1
S617	EVQ12405K	SWITCH, MODE		1
S618	EVQ12405K	SWITCH, MONITOR		1
S619	EVQ12405K	SWITCH, MEMO		1
S620	EVQ12405K	SWITCH, FF		1
S621	EVQ12405K	SWITCH, PLAYBACK		1
S622	EVQ12405K	SWITCH, FLASH		1
S623	EVQ12405K	SWITCH, REDIAL		1
S624	EVQ12405K	SWITCH, REW		1
S625	EVQ12405K	SWITCH, OGM REC		1
S626	EVQ12405K	SWITCH, OGM PLAY		1
S627	EVQ12405K	SWITCH, ICM ERASE		1
S628	EVQ12405K	SWITCH, AUTO		1
S629	PQSH1A33Z	SWITCH, 2	S	1
S630	PQSH1A33Z	SWITCH, 8	S	1
S631	EVQ12405K	SWITCH, PORGRAM		1
S632	PQSH1A33Z	SWITCH, 1	S	1
S633	PQSH1A33Z	SWITCH, 3	S	1
S634	PQSH1A33Z	SWITCH, 7	S	1
S635	PQSH1A33Z	SWITCH, #	S	1
S636	EVQ12405K	SWITCH, STORE		1
S637	PQSH1A33Z	SWITCH, 0	S	1
S638	PQSH1A33Z	SWITCH, 5	S	1
S639	EVQ12405K	SWITCH, PAUSE		1
S640	PQSH1A33Z	SWITCH, 6	S	1

Part No.	Part No.	Part Name & Description		Pcs
S641	PQSH1A33Z	SWITCH, *	S	1
S642	PQSH1A33Z	SWITCH, 4	S	1
S643	PQSH1A33Z	SWITCH, 9	S	1
SW901	ESE14A211	SWITCH, COVER OPEN		1
		(PHOTO ELECTRIC TRANSDUCERS)		
PC701	PQVIPS4506	SENSOR, DOCUMENT SET		1
PC702	PQVIPS4506	SENSOR, READ POSITION		1
PC801	PQVIPS6002	SENSOR, JAM		1
PC802	PQVIPS4506	SENSOR, RECODING PAPER		1
		(LCD & CONNECTORS)		
LCD	PQADE5322	LCD		1
CN401	PQJS2R32Z	CONNECTOR, 2P		1
CN601	PQJS18X48Z	CONNECTOR, 18P		1
CN701	PQJS4R35Z	CONNECTOR, 4P		1
CN801	PQJS4R36Z	CONNECTOR, 4P		1
CN901	PQJS2R31Z	CONNECTOR, 2P		1
		CCD BOARD PARTS		
PCB4	PQWP4F50M	CCD BOARD ASS'Y (NLA)		1
		(ICs)		
IC101	PQVIM66705FP	IC		1
IC102	PQWP4F50M	CCD BOARD ASS'Y (NLA)		1
		(TRANSISTORS)		
Q101	2SD1819A	TRANSISTOR(SI)	S	1
Q102	2SD1819A	TRANSISTOR(SI)	S	1
		(VARIABLE RESISTOR)		
VR101	EVNDXAA03B23	SEMI-FIXED, 2K(B)		1
		(CAPACITORS)		
C101	PQCUV1H103KB	0.01		1
C102	ECEA1CKS100	10		1
C103	ECEA1CKS100	10		1
C104-108	PQCUV1E104MD	0.1		5
		(RESISTORS)		
R101	PQ4R10XJ101	100		1
R102	PQ4R10XJ100	10		1
R103	PQ4R10XJ101	100		1
R104	PQ4R10XJ100	10		1
R105	PQ4R10XJ331	330		1
R106	PQ4R10XJ101	100		1
R107	PQ4R10XJ470	47		1
R108	PQ4R10XJ104	100K		1
R109	PQ4R10XJ472	4.7K		1
R110	PQ4R10XJ221	220		1
R111	PQ4R10XJ223	22K		1
R112	PQ4R10XJ102	1K		1
R113	PQ4R10XJ102	1K		1
		(CONNECTOR)		
CN101	PQJS8R32Z	CONNECTOR, 8P		1
		SWITCHING POWER SUPPLY BOARD PARTS		
PCB5	PQLP017Z	SWITCHING POWER SUPPLY BOARD ASS'Y (NLA)	⚠	1
		(ICs)		
IC401	PQVIUPC1093J	IC	S	1
IC402	PQVINJ2360D	IC		1
IC403	PQVITA7812AP	IC		1
IC404	PQVITA7812AP	IC		1
IC451	PQVIM51977P	IC	⚠	1

Part No.	Part No.	Part Name & Description		Pcs
		(TRANSISTORS)		
Q403	2SD1266P	TRANSISTOR(SI)	S	1
Q404	PQVTDTC143XS	TRANSISTOR(SI)		1
Q405	2SK1488	TRANSISTOR(SI)	⚠ S	1
		(DIODES)		
D401	PQVDD5SBA40S	DIODE(SI)	⚠	1
D402-406	Not Used			
D407	PQVDD10LC20U	DIODE(SI)		1
D408	PQVDD5LC20U	DIODE(SI)		1
D409	PQVD1GU42	DIODE(SI)	S	1
D410	MA4270	DIODE(SI)		1
D411	Not Used			
D412	Not Used			
D413	1SS147	DIODE(SI)		1
D414	PQVDD5LC20U	DIODE(SI)		1
D415	MA7062	DIODE(SI)		1
D451	Not Used			
D452	PQVD1GU42	DIODE(SI)	⚠	1
D453	PQVD1JU41	DIODE(SI)	⚠	1
D454	Not Used			
D455	PQVD1GU42	DIODE(SI)	⚠	1
		(FUSE)		
F401	XBA1C50NU100	FUSE	⚠	1
F402	Not Used			
F403	PQBA1P15NMAL	FUSE	⚠	1
		(COILS)		
L401	PQLE105	COIL, CHOKE	⚠	1
L402	PQLE104	COIL, CHOKE	⚠	1
L403	PQLE107	COIL, CHOKE		1
		(PHOTO ELECTRIC TRANSDUCERS)		
PC401	PQVIPC817K	PHOTO COUPLER	⚠	1
PC402	PQVIPC817K	PHOTO COUPLER	⚠	1
		(THERMISTORS)		
TH401	PQRTD5FFL8R0	THERMISTOR	⚠	1
TH402	PQRTE0FFF103	THERMISTOR		1
		(TRANSFORMER)		
T401	ETS33K336V	SWITCHING TRANSFORMER		1
		(RELAY)		
RLY401	PQSL79Z	RELAY		1
		(CAPACITORS)		
C401	ECQU1A104MH	0.1	⚠	1
C402	ECKZRS222ME	0.0022	⚠	1
C403	ECKZRS222ME	0.0022	⚠	1
C404	ECQU1A104MH	0.1	⚠	1
C405	PQVDSR471KD	VARISTOR	⚠	1
C406	PQVDSR471KD	VARISTOR	⚠	1
C407	ECKDRS332ME	0.0033	⚠	1
C408	ECKDRS332ME	0.0033	⚠	1
C409-415	Not Used			
C416	ECOS1VG392L	3900		1
C417	ECEA1HGE100	10		1
C418	ECEA1VGE222	2200		1
C419	Not Used			
C420	ECEA1VGE471	470		1
C421	Not Used			
C422	Not Used			
C423	ECEA1VGE101	100		1
C424	ECEA1EGE470	47		1
C425-429	Not Used			
C430	ECEA1EGE101	100		1
C431-433	Not Used			

Part No.	Part No.	Part Name & Description		Pcs
C434	ECEA1AGE332	3300		1
C435	ECCD1H151JC	150P		1
C436	ECEA1VGE102	1000		1
C437-439	Not Used			
C440	ECKZRS102ME	0.001		1
C441	ECQV1H104JZ	0.1		1
C442	ECQV1H104JZ	0.1		1
C443	ECQV1H104JZ	0.1		1
C444	Not Used			
C451	ECOS2DG561M	560	⚠	1
C452-454	Not Used			
C455	ECQB1H391KF	390P	⚠	1
C456	ECEA1VGE220	22	⚠	1
C457	ECQV1H104JZ	0.1	⚠	1
C458	ECKD3A221KBN	220P	⚠	1
C459	ECQE6473B	0.047	⚠	1
C460	ECQV1H104JZ	0.1	⚠	1
C461	Not Used			
C462	ECEA1VGE101	100	⚠	1
C463	ECQV1H154JZ	0.15	⚠	1
C464	ECQM1H103JV	0.01	⚠	1
C465	Not Used			
C466	Not Used			
C467	ECQV1H104JZ	0.1	⚠	1
		(RESISTORS)		
R411	ERG2SJ221	220		1
R412	ER016CKF1002	10K		1
R413	ER016CKF1131	1.13K		1
R414	Not Used			
R415	ERG1SJ561	560		1
R431	ERX1SJR22	0.22		1
R432	ER016CKF3651	3.65K		1
R433	ER016CKF1201			1
R434	ERDS1TJ121	120		1
R435	ERDS1TJ154	150K	⚠	1
R436	ERDS1TJ154	150K	⚠	1
R437	Chip Jumper	0Ω		1
R438	Not Used			
R439	Not Used			
R440	ERX3SJ5R6	5.6		1
R441	ERG2SJ122	1.2K		1
R452	ERDS2TJ270	27	⚠	1
R453	Not Used			
R454	ERG3SJ104	100K	⚠	1
R455	Not Used			
R456	ER016CKF1472	14.7K	⚠	1
R457	ER016CKF2212	22.1K	⚠	1
R458	ERG3SJ470	47	⚠	1
R459	ERX3SJR10	0.1	⚠	1
R460	ERDS2TJ331	330	⚠	1
R461	ERDS2TJ331	330	⚠	1
R462	ERG2SJ683	68K	⚠	1
R463	ERG3SJ470	47	⚠	1
R464	ERDS2TJ103	10K	⚠	1
R465	ERDS2TJ103	10K	⚠	1
R466	ERDS1TJ181	180	⚠	1
R467	ERDS2TJ391	390	⚠	1
R468	ERDS2TJ123	12K	⚠	1
R469	ERG2SJ683	68K	⚠	1
R480	ERDS2TJ273	27K	⚠	1
		(CONNECTORS)		
CN401	PQJP3D97Z	CONNECTOR, 3P	⚠	1
CN402	PQJP11D70Z	CONNECTOR, 11P		1
CN403	Not Used			
CN404	PQJP10G74Z	CONNECTOR, 10P		1

ACCESSORIES AND PACKING MATERIALS



REPLACEMENT PARTS LIST

Model KX-F90

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety. when replacing any of these components, use only manufacture's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) k=1000Ω,M=1000kΩ
   All capacitors are in MICRO FARADS(μF) P=μμF
   *Type &Wattage of Resistor
   Type

ERC:Solid	ERX:Metal Film	PQ4R:Carbon
ERD:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
PQRD:Carbon	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor
Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,PQCBC : Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG : Polyster
PQCUV:Chip	ECEA,ECSZ : Electrolytic
ECQMS:Mica	ECQP : Polypropilylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs
		CABINET, MECHANICAL AND ELECTRICAL PARTS	
1	PQGP118Z	PANEL	1
2	PQHR5288Z	TRANSPARENT PLATE, MEMORY CARD	1
3	PQHP5056Z	CARD, MEMORY	1
4	PQDF9031Z	SHAFT, OPERATION GRILLE	2
5	PQKG10Z	CASSETTE LID	1
6	PQQT5150Z	INSTRUCTION LABEL	1
7	PQGG87Z	GRILLE, OPERATION	1
8	PQQT4336Z	CAUTION LABEL-A	1
9	PQBCX171Z2	BUTTON, OGM PLAY/REC/ICM EARSE	1
10	PQBCX170Z	BUTTON, REW/FF/MEMO/2WAY	1
11	PQBC260Z	BUTTON, PALYBACK/PAUSE	1
12	PQBCX172Z	BUTTON, FLASH, REDIAL	1
13	PQBC261Z	BUTTON, MONITOR/VOICE STDBY	1
14	PQBCX167Z	BUTTON, DIAL/PRO/SET/PAUSE/AUTO	1
15	PQBC259Z	BUTTON, STOP/CLEAR	1
16	PQBCX169Z	BUTTON, FINE/LIGHT/POLLING/RECE.	1
17	PQBCX168Z	BUTTON, MEMORY	2
18	PQBC258Z	BUTTON, START/COPY	1
19	PQJE97Y	FLAT CABLE	1
20	PQHR9466Z	HOLDER, OPERATION GRILLE	1
21	PQHR9423Z	COVER, OPERATION GRILLE	1
22	PQUS211Z	SPRING, THERMAL HEAD	3
23	PQHR9421Z	LEFT GUIDE, THERMAL HEAD	1
24	PQHR9422Z	RIGHT GUIDE, THERMAL HEAD	1
25	PQJHS8Z	THERMAL HEAD	1
26	PQHE5020Y	SCREW, THERMAL HEAD M' TG	2
27	PQJS19S30Y	CONNECTOR, 19P	1
28	PQGP119Z	LED COVER	3
29	PQUS213Z	SPRING, OPERATION GRILLE COVER	1
30	PQBD155Z	KNOB, CONTRAST	1
31	PQQT9529Z	LABEL, #800 CALL	1
40	PQDG5036Z	MIDDLE GEAR-A	1
41	PQHR9426Z	SPACER, FEED ROLLER	4
42	PQDN19Y	ROLLER, DOCUMENT FEED	1
43	PQHR9427Z	SPACER, FEED ROLLER	2
44	PQDN20Y	ROLLER, DOCUMENT DISCHARGE	1
45	PQUS187Y	SPRING, DOCUMENT SEPARARTION	1
46	PQHG827Z	RUBBER, DOCUMENT SEPARATION	1
47	PQHM117Z	METAL, SEPARATION RUBBER M' TG	1
48	PQHR5289Z	READING PLATE	1
49	PQZMF50M	DOCUMENT GUIDE-A ASS'Y	1
50	PQUV104Y	REAR COVER	1
51	PQHR9424Z	SPACER, THERMAL PLATEN	2
52	PQDN17Z	THERMAL PLATEN	1
53	PQMD9021Z	GEAR CHASSIS-A	1
54	PQDG5037Z	GEAR, PLATEN	1
55	EST15704V	SWITCH, POWER ⚠	1
56	PQJP3A2Z	AC SOCKET ⚠	1
57	PQJS2L94Z	CONNECTOR, 2P ⚠	1
58	PQHR576Z	TRANSPARENT PLATE, TEL. NO. CARD	1
59	PQHP532X	CARD, TEL. NO.	1
60	PQKM195W	CABINET BODY, HANDSET CRADLE	1
61	PQBE32Y	BUTTON, HOOK	1
62	PQAS5P05Z	SPEAKER	1
63	PQJS2L93Z	CONNECTOR, 2P	1
64	PQYMF90M	UPPER CABINET ASS'Y	1
65	PQQT4335Z	CAUTION LABEL-B	1
66	PQBD163Z	KNOB, FRONT/BACK LID OPEN	2
67	PQJX2PM409Z	HANDSET ASS'Y	1
68	PQJS11M347	CONNECTOR, 11P	1
69	PQDG5043Z	MIDDLE GEAR-B	1
70	PQDG5044Z	GEAR, RECORDING PAPER FEED	2
71	PQDN21Y	ROLLER, DOCUMENT FEED	1
72	PQDF9028Z	SHAFT, DOCUMENT LID	1
73	PQUS219Y	SPRING, DOCUMENT LID (LEFT)	1
74	PQUS221Y	SPRING, DOCUMENT LID (RIGHT)	1
75	PQYEF50M	DOCUMENT LID	1
75-1	PQJE113Z	BRUSH-A	1
76	XUC4FY	RETAINING RING	1
77	PQHR9428Z	DOCUMENT GUIDE, UPPER SIDE	1
78	PQDF9029Z	SHAFT, SUB ROLLER	2
79	PQDR16Z	SUB ROLLER-A	2
80	PQHR9445Y	DOCUMENT GUIDE-B	1
81	PQDG5038Z	GEAR, RECORDING PAPER FEED	2
82	LN803184UN	LED ARRAY	1
83	PQUS216Z	SPRING, MIRROR M' TG	4
84	PQQM3Z	MIRROR-A (LONG)	1
85	PQQM4Z	MIRROR-B (SHORT)	1
86	PQHR9429Z	LEVER, CCD ADJUSTMENT	2
87	PQZEF50M	CCD CHASSIS	1
88	PQHR9419Z	LOCK LEVER-L	1
89	PQUS208Z	SPRING, LOCK LEVER	2
90	PQHR9420Z	LOCK LEVER-R	1
91	PQUS217Z	SPRING, LENS M' TG	1
92	PQWEF50M	LENS (WITH SPACER)	1
93	PQJQ26Z	MOTOR, RECEPTION	1
94	PQMD9014Z	GEAR CHASSIS-B	1
95	PQDG5035Z	MIDDLE GEAR-B	1
96	PQDG5034Z	MIDDLE GEAR-C	1
97	PQJQ27Z	MOTOR, TRANSMISSION	1
98	PQMD9013Z	GEAR CHASSIS-C	1
99	PQDG5033Z	MIDDLE GEAR-D	3
100	PQHR9417Z	LOCK LEVER, LEFT	1
101	PQHR9418Z	LOCK LEVER, RIGHT	1
102	PQUS207Y	SPRING,RIGHT LOCK LEVER, ROLLER	3
103	XUC2FY	RETAINING RING	1
104	PQDG5039Z	GEAR, SEPARATION	1
105	PQUS215Z	SPRING, SEPARATION ROLLER	1
106	PQUV103Y	COVER	1
107	PQHR9425Z	SPACER, SEPARARION ROLLER	2
108	PQDN18Z	ROLLER, DOCUMENT SEPARATION	1
109	PQDR17Z	SUB ROLLER-B	1
110	PQDF9042Z	SHAFT, SUB ROLLER-B	1
111	PQUS209Z	SPRING, SUB ROLLER-A M' TG	2
112	PQHR9539Z	LEVER, SENSOR	1
113	PQSG010Z	CUTTER	1
114	PQDG5041Z	WORM GEAR	1
115	PQYFF90M	LOWER CABINET	1
116	PQKE55Z1	ROM LID	1
117	PQBD162Z	KNOB, VOLUME	1
118	PQHR9416Y	LEVER, RECORDING PAPER DET.	1
119	PQHR9510Z	SPACER, DECK CONNECTOR	1
120	PQQT4337Z	CAUTION LABEL-C	1
121	PQZSF50M	SPRING ASS'Y, SUB ROLLER-B M' TG	1
122	PQUS228Z	SPRING, LOCK LEVER	1
123	PQJS2L96Z	CONNECTOR,2P	1
124	PQJM120Z	MICROPHONE	1
125	PQHG503Z	RUBBER PARTS, MIC COVER	1

Ref. No.	Part No.	Part Name & Description	Pcs
126	PQ0G2Z	GLASS	1
127	PQHR9451Z	SPACER, HOOK SWITCH	1
128	PQMD9015Z	GEAR CHASSIS-D	1
129	PQJQ28Z	MOTOR, CUTTER	1
130	PQJS2L95Z	CONNECTOR, 2P	1
131	PQHE5025Z	PLASTIC SCREW	3
132	PQDG5040Z	GEAR (FOR CUTTER)	1
133	PQHR9527Z	GUIDE, PAPER DISCHARGE	1
134	PQBD167Z	KNOB, CUTTER LEVER	1
135	PQHM126Z	PAPER GUIDE, UPPER	1
136	PQHM127Y	PAPER GUIDE, LOWER	1
200	PQHR9410Z	SLIDER-L	1
201	PQHR9411Z	SLIDER-R	1
202	PQHR9412Y	COVER,SLIDER	1
203	PQKE71Y	TRAY (LARGE)	1
204	PQKE72Y	TRAY (SMALL)	1
205	PQDG5042Z	GEAR	1
206	PQKE73Z	STACKER (LARGE)	1
207	PQKE60Z	STACKER (SMALL)	1
R950	PQRD250TJ105	RESISTOR, 1MΩ	1
		CASSETTE DECK PARTS	
M1	PQFM9909Z	MOTOR ASSY	1
M2	PQFD9913Z	PINCH ROLLER ASSY	1
M3	PQFF9909Z	FLYWHEEL ASSY	1
M3-1	PQFN35Z	WASHER-C	1
M4	PQFG9904Z	GEAR ASSY	1
M4-1	PQFN48Z	WASHER-D	1
M5	PQFR9912Z	TAKEUP REEL TABLE ASSY	1
M6	PQFR9913Z	SUPPLY REEL TABLE ASSY	1
M7	PQFD82Y	HEAD BASE PLATE	1
M8	PQFW42Z	HEAD BASE	1
M9	PQFS73Z	SPRING, RECORD/PLAYBACK HEAD	1
M10	PQJH1M2Z	RECORD/PLAYBACK HEAD	1
M11	PQJH6M2Z	ERASE HEAD	1
M12	PQFS109Z	SPRING, PINCH ROLLER	1
M13	PQFS1107	SPRING, HEAD PLATE	1
M14	PQFJ2Z	TERMINAL	1
M15	PQFC9909X	CHASSIS ASSY	1
M16	PQFI14Z	RUBBER PARTS, MOTOR SPACER	2
M17	PQUP589Y	P.C. BOARD, REED SWITCH	1
M18	PQJS9B30Z	CONNECTOR, 9P	1
M19	PQFN33Z	WASHER (FOR OIL CUT)	2
M20	PQFB12Z	BELT	1
M21	PQFD64Z	PLATE SPRING	1
M22	PQFS82Z	SPRING, REEL TABLE	2
M23	PQFP126Y	PLUNGER	1
M24	PQHD15Z	SCREW	2
M25	PQFN49Z	WASHER (FOR LOCK OF FLYWHEEL)	1
M26	PQSE91Z	SWITCH, REED	1
M27	ERDS2TJ563	RESISTOR, 56KΩ	1
		ACCESSORIES AND PACKING MATERIALS	
A1	PQJA59Y	CORD, TEL. S	1
A2	PQJA200Z	CORD, POWER ⚠	1
A3	PQJA30V	CORD, HANDSET	1
A4	RT-N30-JT1P	MICRO CASETTE TAPE	1
A5	PQHP416Z	RECORDING PAPER	1
A6	PQQX6195Z	INSTRUCTION BOOK	1
A7	PQQX9752Z	FAX CORRESPONDECE SHEET	1
A8	PQQX9636Z	CARD, DIAL	1
A9	PQQX9634Z	INSTRUCTION BOOK (QUICK REFERENCE) (ENGLISH)	1
A10	PQQX9635Z	INSTRUCTION BOOK (QUICK REFERENCE) (SPANISH)	1
A11	XZB25X34A04	PROTECTION COVER (DOCUMENT)	1
A12	XZB20X20A04	PROTECTION COVER (CORD)	1
A13	PQPH103Z	PROTECTION COVER (TRAY)	2
A14	PQQX9638Z	CARD, 50 STATION	1
A15	PQUS230Z	SPRING	1
A16	XZB10X28A04	PROTECTION COVER (SPRING)	
P1	PQPK1052Z	GIFT BOX	1
P2	PQPN1200Z	ACCESSORY BOX	1
P3	PQPN9056Z	CUSHION, COMPLETE	1
P4	PQPN935Z	HANDLE	1
P5	PQPH92Z	PROTECTION COVER (UNIT)	1

Ref. No.	Part No.	Part Name & Description	Pcs
		DIGITAL BOARD PARTS	
PCB1	PQWP1F90M	DIGITAL BOARD ASSY	1
		(ICs)	
IC1	PQVIR6632	IC	1
IC2	PQVIR11493	IC	1
IC3	PQVI9218B448	IC S	1
IC4	PQWIF90M	IC	1
IC5	PQVIHM6264LA	IC S	1
IC6	PQVIHM6264LA	IC S	1
IC7	PQVINJM4558M	IC	1
IC8	PQVIM5195BL	IC	1
IC9	PQVIDC0834CN	IC	1
IC10	PQVIRIP5C62	IC	1
IC11	Not Used		
IC12	PQVIBA12003	IC	1
IC13	PQVIBA12003	IC	1
IC14	PQVILC89066	IC	1
IC15	PQVITC4053BF	IC	1
IC16	PQVINJM082RM	IC	1
IC17	PQVINJM082BM	IC	1
IC18	PQVINJM082BM	IC	1
		(TRANSISTORS)	
Q1	2SD1819A	TRANSISTOR(SI) S	1
Q2	2SB1218A	TRANSISTOR(SI) S	1
Q3	2SB1218A	TRANSISTOR(SI) S	1
Q4	PQVTDTC114K	TRANSISTOR(SI) S	1
Q5	PQVTDTC114K	TRANSISTOR(SI) S	1
Q6	2SB1322	TRANSISTOR(SI)	1
Q7	2SB1322	TRANSISTOR(SI)	1
Q8	PQVTDTC114K	TRANSISTOR(SI) S	1
Q9	2SB1240AR	TRANSISTOR(SI)	1
Q10	2SB1240AR	TRANSISTOR(SI)	1
Q11	2SD1994A	TRANSISTOR(SI)	1
Q12	2SD1819A	TRANSISTOR(SI) S	1
Q201	2SD1819A	TRANSISTOR(SI) S	1
Q202	2SB1240AR	TRANSISTOR(SI)	1
Q203	2SD1819A	TRANSISTOR(SI) S	1
Q204	2SD1819A	TRANSISTOR(SI) S	1
		(DIODES)	
D1	MA4051	DIODE(SI)	1
D2	Not Used		
D3	Not Used		
D4	MA700A	DIODE(SI)	1
D5	Not Used		
D6	MA4027M	DIODE(SI)	1
D7	Not Used		
D8	Not Used		
D9	1SS131	DIODE(SI)	1
D10	Not Used		
D11	MA7200	DIODE(SI)	1
D12	1SS147	DIODE(SI)	1
D13	MA7200	DIODE(SI)	1
D14	1SS147	DIODE(SI)	1
D15	PQVD1SR354A	DIODE(SI)	1
D16	MA4270	DIODE(SI)	1
D17	Not Used		
D18	Not Used		
D19	Not Used		
D20	1SS131	DIODE(SI)	1
D201-206	1SS131	DIODE(SI)	6
		(COMPONENTS COMBINATIONS)	
RA1	PQRSLD8X472J	RESISTOR ARRAY	1
RA4	PQRSLD4X103J	RESISTOR ARRAY	1
LP2,3	EXCEMT220B	NOISE FILTER	2
LP4	EXCEMT102B	NOISE FILTER	1

Ref. No.	Part No.	Value		Pcs
		(CRYSTAL OSCILLATOR)		
X1	PQVCL2400N3Z	CRYSTAL OSCILLATOR		1
X2	PQVCL3276N6Z	CRYSTAL OSCILLATOR		1
		(CAPACITORS)		
C1	PQCUV1H180JC	18P		1
C2	PQCUV1H390JC	39P		1
C3	PQCUV1E104MD	0.1	S	1
C4	PQCUV1H102J	1000P		1
C5	PQCUV1H102J	1000P		1
C6	Not Used			
C7	PQCUV1H180JC	18P		1
C8	PQCUV1H150JC	15P		1
C9	ECEA1CKS100	10		1
C10	Not Used			
C11	Not Used			
C12	PQCUV1E104MD	0.1		1
C13	PQCUV1E104MD	0.1	S	1
C14	PQCUV1E104MD	0.1	S	1
C15	PQCUV1H103KB	0.01		1
C16	PQCUV1H103KB	0.01		1
C17	PQCUV1H101JC	100P		1
C18	ECEA1EU101	100		1
C19	PQCUV1H472KB	0.0047		1
C20	PQCUV1E104MD	0.1		
C21	PQCUV1E104MD	0.1		1
C22	PQCUV1E104MD	0.1		1
C23	PQCUV1E104MD	0.1		1
C24	PQCUV1E104MD	0.1		1
C25	PQCUV1E104MD	0.1		1
C26	Not Used			
C27	ECEA1VKA330	33		1
C28	Not Used			
C29	ECEA1HKSR33	0.33		1
C30	PQCUV1H020CC	2P		1
C31	PQCUV1H470JC	47P		1
C32	PQCUV1H103KB	0.01		1
C33-49	Not Used			
C50	PQCUV1E104MD	0.1		1
C51	PQCUV1E104MD	0.1		1
C52	PQCUV1E104MD	0.1		1
C53	ECEA1HKS010	1		1
C54	ECEA1CKS100	10		1
C55	PQCUV1E104MD	0.1		1
C56	PQCUV1E104MD	0.1		1
C57	PQCUV1E104MD	0.1		1
C58	PQCUV1E104MD	0.1		1
C59	PQCUV1E104MD	0.1		1
C60	Not Used			
C61	PQCUV1E104MD	0.1		1
C62	PQCUV1E104MD	0.1		1
C63	PQCUV1E104MD	0.1		1
C64	PQCUV1E104MD	0.1		1
C65	PQCUV1E104MD	0.1		1
C66	PQCUV1E104MD	0.1		1
C67	PQCUV1E104MD	0.1		1
C68	PQCUV1E104MD	0.1		1
C69	ECEA1VKA330	33		1
C70	PQCUV1E104MD	0.1		1
C71	PQCUV1E104MD	0.1		1
C72	PQCUV1E104MD	0.1		1
C73	PQCUV1E104MD	0.1		1
C74	ECEA1VKA330	33		1
C75	ECEA1VKA330	33		1
C76	ECEA0JK221	220		1
C77	ECEA0JK221	220		1
C78	ECEA1VKA330	33		1
C79	ECEA1EU101	100	S	1
C80	ECEA1EU101	100	S	1
C81	Not Used			
C82	PQCUV1E104MD	0.1		1
C83	PQCUV1E104MD	0.1		1
C84	PQCUV1H103KB	0.01		1
C85	PQCUV1H103KB	0.01		1
C86	PQCUV1E104MD	0.1		1
C87	PQCUV1H153KB	0.015		1
C88	PQCUV1H331JC	330P		1

Part No.	Part No.	Value	Pcs
C89	PQCUV1E104MD	0.1	1
C90	PQCUV1E104MD	0.1	1
C91	PQCUV1E104MD	0.1	1
C92	PQCUV1E104MD	0.1	1
C93	PQCUV1E104MD	0.1	1
C202	PQCUV1H101JC	100P	1
C210	PQCBC1H470JL	47P	1
		(RESISTORS)	
R1	PQ4R10XJ103	10K	1
R2	ERDS2TJ271	270	1
R3	PQ4R10XJ103	10K	1
R4	PQ4R10XF1002	10K	1
R5	PQ4R10XF3652	36.5K	1
R6	ERDS2TJ3R3	3.3	1
R7	PQ4R10XJ272	2.7K	1
R8	PQ4R10XF8662	86.6K	1
R9	PQ4R10XJ683	68K	1
R10	PQ4R10XJ563	56K	1
R11	ER016CKF8662	86.6K	1
R12	PQ4R10XJ222	2.2K	1
R13	PQ4R10XJ472	4.7K	1
R14	PQ4R10XJ472	4.7K	1
R15	PQ4R10XJ222	2.2K	1
R16	Not Used		
R17	PQ4R10XJ103	10K	1
R18	PQ4R10XJ392	3.9K	1
R19	Not Used		
R20	PQ4R10XJ104	100K	1
R21	PQ4R10XJ103	10K	1
R22	Not Used		
R23	PQ4R10XJ222	2.2K	1
R24	PQ4R10XJ103	10K	1
R25	PQ4R10XJ104	100K	1
R26	PQ4R10XJ104	100K	1
R27	PQ4R10XJ104	100K	1
R28	ER016CKF2202	2.2K	1
R29	PQ4R10XJ473	47K	1
R30	PQ4R10XJ473	47K	1
R31	ER016CKF1501	1.5K	1
R32	PQ4R10XJ473	47K	1
R33	PQ4R10XJ472	4.7K	1
R34	PQ4R10XJ103	10K	1
R35	PQ4R10XJ103	10K	1
R36	PQ4R10XJ103	10K	1
R37	PQ4R10XJ332	3.3K	1
R38	PQ4R10XJ332	3.3K	1
R39	Not Used		
R40	ERDS2TJ331	330	1
R41	PQ4R10XJ222	2.2K	1
R42-45	Not Used		
R46	PQ4R10XJ103	10K	1
R47	PQ4R10XF2701	2.7K	1
R48	PQ4R10XF1801	1.8K	1
R49	PQ4R10XJ272	2.7K	1
R50	PQ4R10XJ101	100	1
R51	PQ4R10XJ272	2.7K	1
R52	PQ4R10XJ103	10K	1
R53	ERDS1TJ222	2.2K	1
R54	PQ4R10XJ103	10K	1
R55	ERDS1TJ222	2.2K	1
R56	PQ4R10XJ473	47K	1
R57	ERDS1TJ222	2.2K	1
R58	Not Used		
R59	ERDS2TJ103	10K	1
R60	PQ4R10XJ103	10K	1
R61	ERDS2TJ122	1.2K	1
R62	PQ4R10XJ103	10K	1
R63	PQ4R10XJ103	10K	1
R64	PQ4R10XJ563	56K	1
R65	PQ4R10XJ563	56K	1
R66	PQ4R10XJ563	56K	1
R67	PQ4R10XJ563	56K	1
R68	PQ4R10XJ563	56K	1
R69	PQ4R10XJ563	56K	1
R70	PQ4R10XJ682	6.8K	1

Part No.	Part No.	Part Name & Description	Pcs
R71	PQ4R10XJ682	6.8K	1
R72	PQ4R10XJ682	6.8K	1
R73	PQ4R10XJ682	6.8K	1
R74	PQ4R10XJ682	6.8K	1
R75	PQ4R10XJ682	6.8K	1
R76	PQ4R10XJ470	47	1
R77	PQ4R10XJ470	47	1
R78-81	Not Used		
R82	PQ4R10XJ473	47K	1
R83	PQ4R10XJ103	10K	1
R84	PQ4R10XJ222	2.2K	1
R85	PQ4R10XJ103	10K	1
R86	PQ4R10XJ103	10K	1
R87	PQ4R10XJ391	390	1
R88	PQ4R10XJ102	1K	1
R89	PQ4R10XJ102	1K	1
R90	PQ4R10XJ103	10K	1
R91	PQ4R10XJ103	10K	1
R92	PQ4R10XJ103	10K	1
R93	PQ4R10XJ103	10K	1
R94	PQ4R10XJ103	10K	1
R95	PQ4R10XJ103	10K	1
R96	PQ4R10XJ473	47K	1
R97-99	Not Used		
R100	PQ4R10XJ100	10	1
R101	PQ4R10XJ272	2.7K	1
R102	Chip Jumper	0Ω	1
R103	Not Used		
R104	Chip Jumper	0Ω	1
R105-108	Not Used		
R109	PQ4R10XJ220	22	1
R110	PQ4R10XJ220	22	1
R111	PQ4R10XJ220	22	1
R112	PQ4R10XJ220	22	1
R113	PQ4R10XF1801	1.8K	1
R114	PQ4R10XJ103	10K	1
R115	PQ4R10XJ332	3.3K	1
R116	PQ4R10XJ272	2.7K	1
R117	PQ4R10XJ100	10	1
R118	PQ4R10XJ391	390	1
R119	PQ4R10XJ391	390	1
R120	PQ4R10XJ101	100	1
R121	Not Used		
R122	PQ4R10XJ470	47	1
R201	PQ4R10XJ473	47K	1
R202	Not Used		
R203	PQ4R10XJ222	2.2K	1
R204	PQ4R10XJ222	2.2K	1
R205	PQ4R10XJ222	2.2K	1
R206	PQ4R10XJ101	100	1
R207	PQ4R10XJ102	1K	1
R208	PQ4R10XJ151	150	1
R209	PQ4R10XJ222	2.2K	1
R210	ERDS2TJ103	10K	1
R211	ERDS2TJ182	1.8K	1
R212	ERD21TJ560	56	1
		(BATTERY & CONNECTORS)	
BA1	BR2032/1HF1	LITHIUM BATTERY	1
CN1	PQJP17G72Z	CONNECTOR, 17P	1
CN2	PQJP16G72Z	CONNECTOR, 16P	1
CN3	PQJP9G74Z	CONNECTOR, 9P	1
CN4	PQJP8D94Z	CONNECTOR, 8P	1
CN5	PQJS18X59Z	CONNECTOR, 18P	1
CN6	PQJP11D70Z	CONNECTOR, 11P	1
CN7	PQJP6D94Z	CONNECTOR, 6P	1
CN8	PQJP7D94Z	CONNECTOR, 7P	1
CN9	PQJP2D68Z	CONNECTOR, 2P	1
CN10	PQJP2D107Z	CONNECTOR, 2P	1
CN11	PQJP3D94Z	CONNECTOR, 3P	1
CN12	PQJP4D94Z	CONNECTOR, 4P	1
CN13	PQJP4D94Z	CONNECTOR, 4P	1
CN14	PQJP2D70Z	CONNECTOR, 2P	1

Part No.	Part No.	Part Name & Description		Pcs
		ANALOG BOARD PARTS		
PCB2	PQWP2F50M	ANALOG BOARD ASS'Y (NLA)		1
		(ICs)		
IC3	PQVIM3074AE1	IC		1
IC4	PQVINJM4558D	IC		1
IC5	PQVITMS3477	IC		1
IC6	PQVITM41256A	IC	S	1
IC7	PQVITM41256A	IC	S	1
IC8	PQVINJM4558D	IC		1
IC9	PQVIPD40668C	IC	S	1
IC10	PQVINJ4053BD	IC		1
IC11	AN6181K	IC		1
IC12	PQVIBA6220	IC		1
IC13	PQVINJM4558D	IC		1
IC14	PQVINJM4558D	IC		1
IC15	PQVI672191F	IC		1
IC16	PQVINJM4558D	IC		1
		(TRANSISTORS)		
Q1	2SA1626	TRANSISTOR(SI)	⚠	1
Q2	2SD662B	TRANSISTOR(SI)	⚠	1
Q3	2SC2235	TRANSISTOR(SI)	⚠	1
Q4	PQVTBB1A4A	TRANSISTOR(SI)		1
Q5	Not Used			
Q6	PQVTDTC143E	TRANSISTOR(SI)		1
Q7	Not Used			
Q8	Not Used			
Q9	2SD1819A	TRANSISTOR(SI)	S	1
Q10	Not Used			
Q11	PQVTBB1A4A	TRANSISTOR(SI)		1
Q12	2SD1819A	TRANSISTOR(SI)	S	1
Q13	2SD1819A	TRANSISTOR(SI)	S	1
Q14	2SB1218A	TRANSISTOR(SI)	S	1
Q15	Not Used			
Q16	2SD1819A	TRANSISTOR(SI)	S	1
Q17	2SD1819A	TRANSISTOR(SI)	S	1
Q18	2SD1819A	TRANSISTOR(SI)	S	1
Q19	PQVTDTC143E	TRANSISTOR(SI)		1
Q20	2SD1994A	TRANSISTOR(SI)		1
Q21	2SB1322	TRANSISTOR(SI)		1
Q22	2SB1322	TRANSISTOR(SI)		1
Q23	2SC1740S	TRANSISTOR(SI)		1
Q24	2SC1652	TRANSISTOR(SI)		1
Q25	2SC1652	TRANSISTOR(SI)		1
Q26	2SB1322	TRANSISTOR(SI)		1
Q27	2SB1322	TRANSISTOR(SI)		1
Q28	PQVTDTC143E	TRANSISTOR(SI)		1
Q29	2SD1994A	TRANSISTOR(SI)		1
Q30	PQVTDTC143E	TRANSISTOR(SI)		1
Q31	2SD2136	TRANSISTOR(SI)		1
Q39	PQVTDTC143E	TRANSISTOR(SI)		1
		(DIODES)		
D8	1S1588	DIODE(SI)		1
D9	Not Used			
D10	Not Used			
D11	PQVDHZS2B1	DIODE(SI)	⚠	1
D12-15	Not Used			
D16	MA4056	DIODE(SI)		1
D17	MA4056	DIODE(SI)		1
D18	MA4068	DIODE(SI)		1
D19-22	1SS131	DIODE(SI)		4
D23	1S1588	DIODE(SI)		1
D24-29	1SS131	DIODE(SI)		6
D30	PQVDS1YB40F1	DIODE(SI)	⚠	1
D31	Not Used			
D32 -35	1SS131	DIODE(SI)		4
		(COILS)		
F1,2,3, L1-4	PQLE106	CHOKE COIL	⚠	7
L5,6	PQLQZK680K	CHOKE COIL	⚠	2

Part No.	Part No.	Value		Pcs
		(PHOTO ELECTRIC TRANSDUCERS)		
PC1	PQVIPC814K	PHOTO COUPLER	⚠	1
PC2,3	PQVIPC817CD	PHOTO COUPLER	⚠	2
		(RELAY)		
RLY1	PQSL61Z	RELAY	⚠	1
		(SWITCHES)		
S1	PQSS2A27Z	SWITCH, DIALING MODE		1
S2	ESE14A211	SWITCH, HOOK		1
S3	PQSS3B10Z	SWITCH, RINGER		1
		(TRANSFORMER)		
T1	ETA14Y85AY	CALL TRANSFORMER	⚠	1
		(VARIABLE RESISTORS)		
VR1	EVNDXAA03B23	SEMI-FIXED, 2KΩ (B)		1
VR3	EVNDXAA03B52	SEMI-FIXED, 500Ω (B)		1
VR4	Not Used			
VR5	PQVAL103A14A	VOLUME CONTROL, 10KΩ (A)		1
		(FILTERS)		
X1	PQVFCSB328D1	CERAMIC FILTER		1
X2	Not Used			
X3	PQVBA4.19M2	CERAMIC FILTER		1
		(VARISTOR)		
ZNR1	ERZC07DK820	VARISTOR	⚠	1
SA1	PQVDDDA401M	VARISTOR (SURGE ABSORBER)	⚠	1
SA2-5	PQVDSAE310F1	VARISTOR (SURGE ABSORBER)	⚠	4
		(CAPACITORS)		
C1	ECQE2E224JZ	0.22	⚠	1
C2-5	Not Used			
C6	ECKD2H681KB	680P	⚠	1
C7	ECKD2H681KB	680P	⚠	1
C8	ECKDKC222KB	0.0022	⚠ S	1
C9	Not Used			
C10	Not Used			
C11	Not Used			
C12	ECEA1HU100	10	⚠	1
C13	Not Used			
C14	Not Used			
C15	PQCUV1H121JC	120P		1
C16	PQCUV1C683MD	0.068		1
C17	Not Used			
C18	Not Used			
C19	PQCUV1E333MD	0.033		1
C20	PQCUV1H680JC	68P		1
C21	PQCUV1C683MD	0.068		1
C22	ECEA1HU220	22	⚠	1
C23	ECKD1H102JA	0.001		1
C24	PQCUV1H470JC	47P		1
C25-27	Not Used			
C28	PQCUV1H103KB	0.01		1
C29	PQCUV1E104MD	0.1		1
C30	PQCUV1E104MD	0.1	S	1
C31	ECEA1EU470	47	S	1
C32	PQCUV1H102J	0.001	⚠	1
C33-36	Not Used			
C37	ECEA1AU101	100	S	1
C38	ECEA1HU010	1		1
C39	Not Used			
C40	Not Used			
C41	PQCUV1E104MD	0.1		1
C42	ECEA1HU100	10	S	1
C43	ECEA1HUR22	0.22		1
C44	ECEA1HU100	10	S	1
C45	PQCUV1H153KB	0.015		1
C46	PQCUV1C683MD	0.068		1
C47	PQCUV1H103KB	0.01		1
C48	PQCUV1H103KB	0.01		1

Part No.	Part No.	Value		Pcs
C49	PQCUV1F104MD	0.1		1
C50	ECEA1HU010	1		1
C51	Not Used			
C52	PQCUV1H103KB	0.01		1
C53	PQCUV1H103KB	0.01		1
C54	PQCUV1H103KB	0.01		1
C55	ECEA1AU101	100	S	1
C56	PQCUV1H152KB	0.0015		1
C57	PQCUV1H472KB	0.0047		1
C58	PQCUV1E104MD	0.1		1
C59	Not Used			
C60	Not Used			
C61	PQCUV1H103KB	0.01		1
C62	PQCUV1E104MD	0.1		1
C63	PQCUV1E104MD	0.1		1
C64	PQCUV1H562KB	0.0056		1
C65	ECEA1AU221	220	S	1
C66	PQCUV1E104MD	0.1		1
C67	PQCUV1C683MD	0.068		1
C68	PQCUV1E333MD	0.033		1
C69	ECEA1HNR47S	0.47		1
C70	ECUV1H104MD	0.1	S	1
C71	ECEA1EU101	100	S	1
C72	ECEA1CU221	220		1
C73	ECUV1H104MD	0.1	S	1
C74	ECEA1CU221	220		1
C75	PQCUV1E104MD	0.1		1
C76	ECEA0JKS101	100		1
C77	PQCUV1E104MD	0.1		1
C78	Not Used			
C79	Not Used			
C80	PQCUV1H103KB	0.01		1
C81	PQCUV1H103KB	0.01		1
C82	ECEA1HU010	1		1
C83	Not Used			
C84	PQCUV1H103KB	0.01		1
C85	PQCUV1H103KB	0.01		1
C86	PQCUV1H681JC	680P		1
C87	PQCUV1C683MD	0.068		1
C88	ECEA0JU102	1000		1
C89	PQCUV1E104MD	0.1		1
C90	ECEA1AU221	220	S	1
C91	PQCUV1H103KB	0.01		1
C92	PQCUV1H391JC	390P		1
C93	ECEA1HU010	1		1
C94	PQCUV1E104MD	0.1		1
C95	Not Used			
C96	ECEA1HUR22	0.22		1
C97	PQCUV1H223KB	0.022		1
C98	PQCUV1C683MD	0.068		1
C99	Not Used			
C100	Not Used			
C101	PQCUV1E104MD	0.1		1
C102	ECUV1H104MD	0.1		1
C103	PQCUV1E104MD	0.1		1
C104	PQCUV1E104MD	0.1		1
C105	Not Used			
C106	PQCUV1H103KB	0.01		1
C107	ECEA1HU4R7	4.7		1
C108	PQCUV1H223KB	0.022	S	1
C109	ECEA1HU100	10	S	1
C110	ECEA1HU100	10	S	1
C111	ECEA0JU220	22		1
C112	ECEA1HU010	1		1
C113	PQCUV1H103KB	0.01		1
C114-116	Not Used			
C117	ECQG1H103JZ	0.01		1
C118	PQCUV1H471JC	470P		1
C119	PQCUV1C683MD	0.068		1
C120	PQCUV1H471JC	470P		1
C121	ECEA1AU101	100	S	1
C122	PQCUV1E104MD	0.1		1
C123	PQCUV1C683MD	0.068		1
C124	PQCUV1C683MD	0.068		1
C125	PQCUV1H331JC	330P		1
C126	PQCUV1H331JC	330P		1
C127	Not Used			
C128	ECEA1AU101	100	S	1

Part No.	Part No.	Value		Pcs
C129	PQCUV1C683MD	0.068		1
C130	ECEA1AU221	220	S	1
C131	PQCUV1H223KB	0.022		1
C132	Not Used			
C133	PQCUV1H103KB	0.01		1
C134	ECEA1AU101	100	S	1
C135	ECQP1H682GZ	0.0068		1
C136	ECQP1H682GZ	0.0068		1
C137	ECQP1H682GZ	0.0068		1
C138-143	Not Used			
C144	ECEA0JKS101	100		1
C145	PQCUV1E104MD	0.1		1
C146	PQCUV1H152KB	0.0015		1
C147-150	Not Used			
C151	ECEA1HU100	10		1
C152	PQCUV1C224ZF	0.22		1
C153	Not Used			
C154	Not Used			
C155	ECEA1AU101	100	S	1
C156	Not Used			
C157	ECQP1H682GZ	0.0068		1
C158	Not Used			
C159	PQCUV1E104MD	0.1		1
C160	Not Used			
C161	PQCUV1H103KB	0.01		1
C162-170	Not Used			
C185	ECEA1AU101	100	S	1
C300	ECEA1AU101	100	S	1
C301	ECEA1AU221	220	S	1
C302	PQCUV1E104MD	0.1		1
C303	PQCUV1E473MD	0.047		1
C304	PQCUV1H680JC	68P		1
C305	PQCUV1H103KB	0.01		1
C306	PQCUV1H103KB	0.01		1
C700	PQCUV1E333MD	0.033		1
C701	PQCUV1H103KB	0.01		1
		(RESISTORS)		
R1	ERD25TJ473	47K	⚠	1
R2-6	Not Used			
R7	PQ4R10XJ473	47K		1
R8	Not Used			
R9	PQ4R10XJ104	100K	⚠	1
R10	PQ4R10XJ472	4.7K	⚠	1
R11	PQ4R10XJ154	150K	⚠	1
R12	PQ4R10XJ564	560K	⚠	1
R13	ERDS2TJ102	1K		1
R14	PQ4R10XJ683	68K		1
R15	Not Used			
R16	ERDS2TJ103	10K	⚠	1
R17	ERDS2TJ472	4.7K	⚠	1
R18	Not Used			
R19	Not Used			
R20	PQ4R10XJ271	270		1
R21	PQ4R10XJ182	1.8K		1
R22	Not Used			
R23	PQ4R10XJ182	1.8K		1
R24	PQ4R10XJ473	47K		1
R25	PQ4R10XJ123	12K		1
R26	ER016CKF5360	536		1
R27	PQ4R10XJ472	4.7K		1
R28	PQ4R10XJ821	820		1
R29	PQ4R10XJ274	270K		1
R30	PQ4R10XJ222	2.2K		1
R31	PQ4R10XJ104	100K		1
R32	ER016CKF1541	1.54K		1
R33	PQ4R10XJ154	150K		1
R34	PQ4R10XJ104	100K		1
R35	PQ4R10XJ104	100K		1
R36	ER016CKF1541	1.54K		1
R37	ER016CKF6190	619		1
R38	PQ4R10XJ104	100K		1
R39	PQ4R10XJ224	220K		1
R40	PQ4R10XJ223	22K		1
R41	Not Used			
R42	PQ4R10XJ104	100K		1
R43	Not Used			

Part No.	Part No.	Value	Pcs
R44	PQ4R10XJ684	680K	1
R45-48			
R49	PQ4R10XJ473	47K	1
R50	Not Used		
R51	Not Used		
R52-54	Not Used		
R55	PQ4R10XJ472	4.7K	1
R56	Not Used		
R57	Not Used		
R58	Chip Jumper	0Ω	1
R59	Not Used		
R60	PQ4R10XJ101	100	1
R61	PQ4R18XJ100	10	1
R62	PQ4R10XJ103	10K	1
R63	PQ4R10XJ222	2.2K	1
R64	PQ4R10XJ182	1.8K	1
R65	PQ4R10XJ222	2.2K	1
R66	ERDS2TJ564	560K	1
R67	ERDS2TJ105	1M	1
R68	PQ4R10XJ682	6.8K	1
R69	PQ4R10XJ335	3.3M	1
R70	PQ4R10XJ154	150K	1
R71	PQ4R10XJ185	1.8M	1
R72	PQ4R10XJ394	390K	1
R73	PQ4R10XJ104	100K	1
R74	Not Used		
R75	Not Used		
R76	PQ4R10XJ335	3.3M	1
R77	PQ4R10XJ225	2.2m	1
R78	PQ4R10XJ475	4.7M	1
R79	PQ4R10XJ222	2.2K	1
R80	ERDS2TJ473	47K	1
R81	PQ4R10XJ683	68K	1
R82	PQ4R10XJ272	2.7K	1
R83	PQ4R10XJ473	47K	1
R84	PQ4R10XJ223	22k	1
R85	PQ4R18XJ223	22K	1
R86	PQ4R10XJ272	2.7K	1
R87	PQ4R10XJ153	15K	1
R88	PQ4R10XJ184	180K	1
R89	PQ4R10XJ393	39K	1
R90	PQ4R10XJ272	2.7K	1
R91	PQ4R10XJ222	2.2K	1
R92	PQ4R10XJ103	10K	1
R93	PQ4R10XJ103	10K	1
R94	ERDS2TJ391	390	1
R95	PQ4R10XJ103	10K	1
R96	PQ4R10XJ682	6.8K	1
R97	PQ4R10XJ473	47K	1
R98	PQ4R10XJ102	1K	1
R99	Not Used		
R100	PQ4R10XJ104	100K	1
R101	PQ4R10XJ223	22K	1
R102	PQ4R10XJ330	33	1
R103	Not Used		
R104	PQ4R10XJ124	120K	1
R105	PQ4R10XJ103	10K	1
R106	ERDS2TJ472	4.7K	1
R107	ERDS2TJ681	680	1
R108	ERD25TJ120	12	1
R109	PQ4R10XJ103	10K	1
R110	ERDS2TJ221	220	1
R111	PQ4R10XJ473	47K	1
R112	PQ4R10XJ473	47K	1
R113	PQ4R10XJ471	470	1
R114	PQ4R10XJ471	470	1
R115	PQ4R10XJ473	47K	1
R116	ERDS2TJ151	150	1
R117	PQ4R10XJ221	220	1
R118	ERDS2TJ102	1K	1
R119	ERDS2TJ103	10K	1
R120	Not Used		
R121	PQ4R10XJ122	1.2K	1
R122	PQ4R10XJ102	1K	1
R123	PQ4R10XJ394	390K	1
R124	PQ4R10XJ563	56K	1
R125	PQ4R10XJ180	18	1
R126	PQ4R10XJ183	18K	1

Part No.	Part No.	Part Name & Description	Pcs
R127	PQ4R10XJ121	120	1
R128	PQ4R10XJ334	330K	1
R129	PQ4R10XJ222	2.2K	1
R130	PQ4R10XJ224	220K	1
R131	PQ4R10XJ104	100K	1
R132	PQ4R10XJ563	56K	1
R133	PQ4R10XJ563	56K	1
R134	PQ4R10XJ822	8.2K	1
R135	ERDS2TJ124	120K	1
R136	PQ4R10XJ682	6.8K	1
R137	PQ4R18XJ103	10K	1
R138	PQ4R10XJ2R2	2.2K	1
R139	PQ4R10XJ222	2.2K	1
R140	PQ4R10XJ103	10K	1
R141	PQ4R10XJ102	1K	1
R142	PQ4R10XJ103	10K	1
R143	ERDS2TJ103	10K	1
R144	PQ4R10XJ473	47K	1
R145	ERDS2TJ330	33	1
R146	PQ4R10XJ473	47K	1
R147	PQ4R10XJ333	27K	1
R148	Chip Jumper	0Ω	1
R149	PQ4R10XJ104	100K	1
R150	PQ4R10XJ223	22K	1
R151	PQ4R10XJ562	5.6K	1
R152	PQ4R10XJ152	1.5K	1
R153	PQ4R10XJ103	10K	1
R154	PQ4R18XJ103	10K	1
R155	PQ4R10XJ105	1M	1
R156	PQ4R10XJ681	680	1
R157	PQ4R10XJ224	220K	1
R158	PQ4R10XJ472	4.7K	1
R159	PQ4R10XJ105	1M	1
R160	PQ4R10XJ222	2.2K	1
R161	PQ4R10XJ152	1.5K	1
R162	PQ4R10XJ393	39K	1
R163	Not Used		
R164	ER016CKF21281	21.28K	1
R165	ER016CKF21281	21.28K	1
R166	ER016CKF10641	10.64K	1
R167	PQ4R10XJ474	470K	1
R168-171	Not Used		
R172	ERDS2TJ472	4.7K	1
R173	PQ4R10XJ473	47K	1
R174	PQ4R10XJ103	10K	1
R175	PQ4R10XJ333	33K	1
R176	Not Used		
R177	PQ4R10XJ103	10K	1
R178	ERD25TJ5R6	5.6 ⚠	1
R179	Not Used		
R180	PQ4R10XJ472	4.7K	1
R181-187	Not Used		
R188	PQ4R10XJ223	22K	1
R189	PQ4R10XJ473	47K	1
R190-193	Not Used		
R194	PQ4R10XJ472	4.7K	1
R195	PQ4R10XJ105	1M	1
R196	Not Used		
R197	PQ4R10XJ472	4.7K	1
R198	Not Used		
R199	PQ4R10XJ470	47	1
R200	Not Used		
R201	PQ4R10XJ101	100	1
R202	PQ4R10XJ101	100	1
R203	PQ4R10XJ122	1.2K	1
R204	PQ4R10XJ684	680K	1
R205	PQ4R10XJ152	1.5K	1
R206-209	Not Used		
R210	PQ4R10XJ473	47K	1
R301	ERDS2TJ682	6.8K	1
R501	PQ4R10XJ473	47K	1
R502	PQ4R10XJ224	220K	1
J35	PQ4R10XJ472	4.7K	

Part No.	Part No.	Part Name & Description	Pcs
		(CONNECTORS & JACK)	
CN4	PQJS17B30Z	CONNECTOR, 17P	1
CN5	PQJS16B32Z	CONNECTOR, 16P	1
CN6	PQJP2G43Z	CONNECTOR, 2P	1
CN7	PQJP2G71Z	CONNECTOR, 2P	1
CN9	PQJP9D93Z	CONNECTOR, 9P	1
TEL JACK	PQJJ2TAA1Z	JACK, TELEPHONE ⚠	1
H/S JACK	PQJJ1TB18Z	JACK, HANDSET	1
		OPERATION AND SENSOR BOARD PARTS	
PCB3	PQWP3F90M	OPERATION & SENSOR BOARD ASS'Y (NLA)	1
		(ICs)	
IC601	PQVISN7H258S	IC	1
IC602	PQVISN7H138S	IC	1
IC603	PQVISN7S38S	IC	1
IC604	PQVIPD7225GB	IC	1
		(TRANSISTORS)	
Q601	2SA1602F	TRANSISTOR (SI)	1
Q602	2SA1602F	TRANSISTOR (SI)	1
Q603	2SA1602F	TRANSISTOR (SI)	1
Q604	2SA1602F	TRANSISTOR (SI)	1
		(DIODES)	
D601	1S1588	DIODE (SI)	1
D602	1S1588	DIODE (SI)	1
D603	1S1588	DIODE (SI)	1
D604	1SS131	DIODE (SI)	1
D605	1S1588	DIODE (SI)	1
D606	1SS131	DIODE (SI)	1
D607	1SS131	DIODE (SI)	1
D608	1SS131	DIODE (SI)	1
LED601	LN38GP	LED S	1
LED602	LN38GP	LED S	1
LED603	LN38GP	LED S	1
LED604	LN086WP38	LED	1
LED605	LN28RPXTA3	LED	1
LED606	LN28RPXTA3	LED	1
LRD607	PQVDGL1D11E	LED	1
LED608	PQVDGL1D11E	LED	1
LED609	LN38GP	LED S	1
LED610	LN38GP	LED S	1
LED611	PQVDGL1E11C	LED	1
LED612	LN38GP	LED S	1
LED613	LN38GP	LED S	1
LED614	LN38GP	LED S	1
LED615	LN38GP	LED S	1
		(VARIAVLE RESISTOR)	
VR601	PQVU0811CB23	Semi-Fixed, 2kΩ (B)	1
		(RESISTORS)	
R601	PQ4R10XJ680	68	1
R602	PQ4R10XJ680	68	1
R603	PQ4R10XJ680	68	1
R604	ERD25TJ221	220	1
R605	PQ4R10XJ102	1K	1
R606	ERD25TJ222	2.2K	1
R607	PQ4R10XJ102	1K	1
R608	ERD25TJ222	2.2K	1
R609	PQ4R10XJ102	1K	1
R610	ERD25TJ222	2.2K	1
R611	ERDS2TJ222	2.2K	1
R612	ERDS2TJ103	10K	1
R613	ERDS2TJ103	10K	1
R614	ERD25TJ103	10K	1
R615	ERDS2TJ103	10K	1
R616	ERDS2TJ103	10K	1
R617	ERDS2TJ103	10K	1
R618	ERDS2TJ103	10K	1

Part No.	Part No.	Part Name & Description		Pcs
R619	ERDS2TJ103	10K		1
R620	PQ4R10XJ102	1K		1
R621	PQ4R10XJ102	1K		1
R622	PQ4R10XJ102	1K		1
R623	PQ4R10XJ184	180K		1
R624	PQ4R10XJ103	10K		1
R625	PQ4R10XJ680	68		1
R626	ERDS2TJ820	82		1
R627	PQ4R10XJ820	82		1
R628	ERDS2TJ151	150		1
R629	ERDS2TJ331	330		1
R630	ERDS2TJ151	150		1
R631	PQ4R10XJ102	1K		1
R632	PQ4R10XJ102	1K		1
R633	PQ4R10XJ102	1K		1
R634	ERDS2TJ151	150		1
R635	ERDS2TJ680	68		1
R636	ERDS2TJ680	68		1
R701	ERDS2TJ331	330		1
R702	ERDS2TJ331	330		1
R801	ERDS2TJ331	330		1
R802	ERDS2TJ331	330		1
		(CAPACITORS)		
C601	PQCUV1E104MD	0.1		1
C602	PQCUV1E104MD	0.1		1
C603	PQCUV1E104MD	0.1		1
C604	PQCUV1H102J	1000P		1
C605	PQCUV1H102J	1000P		1
C606	PQCUV1E104MD	0.1		1
C607	Not Used			
C608	PQCUV1E104MD	0.1		1
C609	PQCUV1H102J	1000P		1
		(SWITCHES)		
SW401	PQST2A05Z1	SWITCH, CUTTER POSITION		
S601	EVQ12405K	SWITCH, M1		1
S602	EVQ12405K	SWITCH, M3		1
S603	EVQ12405K	SWITCH, M2		1
S604	EVQ12405K	SWITCH, M4		1
S605	EVQ12405K	SWITCH, M5		1
S606	EVQ12405K	SWITCH, M6		1
S607	EVQ12405K	SWITCH, M7		1
S608	EVQ12405K	SWITCH, M8		1
S609	EVQ12405K	SWITCH, M9		1
S610	EVQ12405K	SWITCH, M10		1
S611	PQSH1A33Z	SWITCH, START/COPY	S	1
S612	PQSH1A33Z	SWITCH, STOP/CLEAR	S	1
S613	EVQ12405K	SWITCH, POLLING		1
S614	EVQ12405K	SWITCH, RECV		1
S615	EVQ12405K	SWITCH, DARK		1
S616	EVQ12405K	SWITCH, H.T		1
S617	EVQ12405K	SWITCH, MODE		1
S618	EVQ12405K	SWITCH, MONITOR		1
S619	EVQ12405K	SWITCH, MEMO		1
S620	EVQ12405K	SWITCH, FF		1
S621	EVQ12405K	SWITCH, PLAYBACK		1
S622	EVQ12405K	SWITCH, FLASH		1
S623	EVQ12405K	SWITCH, REDIAL		1
S624	EVQ12405K	SWITCH, REW		1
S625	EVQ12405K	SWITCH, OGM REC		1
S626	EVQ12405K	SWITCH, OGM PLAY		1
S627	EVQ12405K	SWITCH, ICM ERASE		1
S628	EVQ12405K	SWITCH, AUTO		1
S629	PQSH1A33Z	SWITCH, 2	S	1
S630	PQSH1A33Z	SWITCH, 8	S	1
S631	EVQ12405K	SWITCH, PORGRAM		1
S632	PQSH1A33Z	SWITCH, 1	S	1
S633	PQSH1A33Z	SWITCH, 3	S	1
S634	PQSH1A33Z	SWITCH, 7	S	1
S635	PQSH1A33Z	SWITCH, #	S	1
S636	EVQ12405K	SWITCH, STORE		1
S637	PQSH1A33Z	SWITCH, 0	S	1
S638	PQSH1A33Z	SWITCH, 5	S	1
S639	EVQ12405K	SWITCH, PAUSE		1
S640	PQSH1A33Z	SWITCH, 6	S	1

Part No.	Part No.	Part Name & Description		Pcs
S641	PQSH1A33Z	SWITCH, *	S	1
S642	PQSH1A33Z	SWITCH, 4	S	1
S643	PQSH1A33Z	SWITCH, 9	S	1
SW901	ESE14A211	SWITCH, COVER OPEN		1
		(PHOTO ELECTRIC TRANSDUCERS)		
PC701	PQVIPS4506	SENSOR, DOCUMENT SET		1
PC702	PQVIPS4506	SENSOR, READ POSITION		1
PC801	PQVIPS6002	SENSOR, JAM		1
PC802	PQVIPS4506	SENSOR, RECODING PAPER		1
		(LCD & CONNECTORS)		
LCD	PQADE5322	LCD		1
CN401	PQJS2R32Z	CONNECTOR, 2P		1
CN601	PQJS18X48Z	CONNECTOR, 18P		1
CN701	PQJS4R35Z	CONNECTOR, 4P		1
CN801	PQJS4R36Z	CONNECTOR, 4P		1
CN901	PQJS2R31Z	CONNECTOR, 2P		1
		CCD BOARD PARTS		
PCB4	PQWP4F50M	CCD BOARD ASS'Y (NLA)		1
		(ICs)		
IC101	PQVIM66705FP	IC		1
IC102	PQWP4F50M	CCD BOARD ASS'Y (NLA)		1
		(TRANSISTORS)		
Q101	2SD1819A	TRANSISTOR(SI)	S	1
Q102	2SD1819A	TRANSISTOR(SI)	S	1
		(VARIABLE RESISTOR)		
VR101	EVNDXAA03B23	SEMI-FIXED, 2K(B)		1
		(CAPACITORS)		
C101	PQCUV1H103KB	0.01		1
C102	ECEA1CKS100	10		1
C103	ECEA1CKS100	10		1
C104-108	PQCUV1E104MD	0.1		5
		(RESISTORS)		
R101	PQ4R10XJ101	100		1
R102	PQ4R10XJ100	10		1
R103	PQ4R10XJ101	100		1
R104	PQ4R10XJ100	10		1
R105	PQ4R10XJ331	330		1
R106	PQ4R10XJ101	100		1
R107	PQ4R10XJ470	47		1
R108	PQ4R10XJ104	100K		1
R109	PQ4R10XJ472	4.7K		1
R110	PQ4R10XJ221	220		1
R111	PQ4R10XJ223	22K		1
R112	PQ4R10XJ102	1K		1
R113	PQ4R10XJ102	1K		1
		(CONNECTOR)		
CN101	PQJS8R32Z	CONNECTOR, 8P		1
		SWITCHING POWER SUPPLY BOARD PARTS		
PCB5	PQLP017Z	SWITCHING POWER SUPPLY BOARD ASS'Y (NLA)	⚠	1
		(ICs)		
IC401	PQVIUPC1093J	IC	S	1
IC402	PQVINJ2360D	IC		1
IC403	PQVITA7812AP	IC		1
IC404	PQVITA7812AP	IC		1
IC451	PQVIM51977P	IC	⚠	1

Part No.	Part No.	Part Name & Description		Pcs
		(TRANSISTORS)		
Q403	2SD1266P	TRANSISTOR(SI)	S	1
Q404	PQVTDTC143XS	TRANSISTOR(SI)		1
Q405	2SK1488	TRANSISTOR(SI)	⚠ S	1
		(DIODES)		
D401	PQVDD5SBA40S	DIODE(SI)	⚠	1
D402-406	Not Used			
D407	PQVDD10LC20U	DIODE(SI)		1
D408	PQVDD5LC20U	DIODE(SI)		1
D409	PQVD1GU42	DIODE(SI)	S	1
D410	MA4270	DIODE(SI)		1
D411	Not Used			
D412	Not Used			
D413	1SS147	DIODE(SI)		1
D414	PQVDD5LC20U	DIODE(SI)		1
D415	MA7062	DIODE(SI)		1
D451	Not Used			
D452	PQVD1GU42	DIODE(SI)	⚠	1
D453	PQVD1JU41	DIODE(SI)	⚠	1
D454	Not Used			
D455	PQVD1GU42	DIODE(SI)	⚠	1
		(FUSE)		
F401	XBA1C50NU100	FUSE	⚠	1
F402	Not Used			
F403	PQBA1P15NMAL	FUSE	⚠	1
		(COILS)		
L401	PQLE105	COIL, CHOKE	⚠	1
L402	PQLE104	COIL, CHOKE	⚠	1
L403	PQLE107	COIL, CHOKE		1
		(PHOTO ELECTRIC TRANSDUCERS)		
PC401	PQVIPC817K	PHOTO COUPLER	⚠	1
PC402	PQVIPC817K	PHOTO COUPLER	⚠	1
		(THERMISTORS)		
TH401	PQRTD5FFL8R0	THERMISTOR	⚠	1
TH402	PQRTE0FFF103	THERMISTOR		1
		(TRANSFORMER)		
T401	ETS33K336V	SWITCHING TRANSFORMER		1
		(RELAY)		
RLY401	PQSL79Z	RELAY		1
		(CAPACITORS)		
C401	ECQU1A104MH	0.1	⚠	1
C402	ECKZRS222ME	0.0022	⚠	1
C403	ECKZRS222ME	0.0022	⚠	1
C404	ECQU1A104MH	0.1	⚠	1
C405	PQVDSR471KD	VARISTOR	⚠	1
C406	PQVDSR471KD	VARISTOR	⚠	1
C407	ECKDRS332ME	0.0033	⚠	1
C408	ECKDRS332ME	0.0033	⚠	1
C409-415	Not Used			
C416	ECOS1VG392L	3900		1
C417	ECEA1HGE100	10		1
C418	ECEA1VGE222	2200		1
C419	Not Used			
C420	ECEA1VGE471	470		1
C421	Not Used			
C422	Not Used			
C423	ECEA1VGE101	100		1
C424	ECEA1EGE470	47		1
C425-429	Not Used			
C430	ECEA1EGE101	100		1
C431-433	Not Used			

Part No.	Part No.	Part Name & Description		Pcs
C434	ECEA1AGE332	3300		1
C435	ECCD1H151JC	150P		1
C436	ECEA1VGE102	1000		1
C437-439	Not Used			
C440	ECKZRS102ME	0.001		1
C441	ECQV1H104JZ	0.1		1
C442	ECQV1H104JZ	0.1		1
C443	ECQV1H104JZ	0.1		1
C444	Not Used			
C451	ECOS2DG561M	560	⚠	1
C452-454	Not Used			
C455	ECQB1H391KF	390P	⚠	1
C456	ECEA1VGE220	22	⚠	1
C457	ECQV1H104JZ	0.1	⚠	1
C458	ECKD3A221KBN	220P	⚠	1
C459	ECQE6473B	0.047	⚠	1
C460	ECQV1H104JZ	0.1	⚠	1
C461	Not Used			
C462	ECEA1VGE101	100	⚠	1
C463	ECQV1H154JZ	0.15	⚠	1
C464	ECQM1H103JV	0.01	⚠	1
C465	Not Used			
C466	Not Used			
C467	ECQV1H104JZ	0.1	⚠	1
		(RESISTORS)		
R411	ERG2SJ221	220		1
R412	ER016CKF1002	10K		1
R413	ER016CKF1131	1.13K		1
R414	Not Used			
R415	ERG1SJ561	560		1
R431	ERX1SJR22	0.22		1
R432	ER016CKF3651	3.65K		1
R433	ER016CKF1201			1
R434	ERDS1TJ121	120		1
R435	ERDS1TJ154	150K	⚠	1
R436	ERDS1TJ154	150K	⚠	1
R437	Chip Jumper	0Ω		1
R438	Not Used			
R439	Not Used			
R440	ERX3SJ5R6	5.6		1
R441	ERG2SJ122	1.2K		1
R452	ERDS2TJ270	27	⚠	1
R453	Not Used			
R454	ERG3SJ104	100K	⚠	1
R455	Not Used			
R456	ER016CKF1472	14.7K	⚠	1
R457	ER016CKF2212	22.1K	⚠	1
R458	ERG3SJ470	47	⚠	1
R459	ERX3SJR10	0.1	⚠	1
R460	ERDS2TJ331	330	⚠	1
R461	ERDS2TJ331	330	⚠	1
R462	ERG2SJ683	68K	⚠	1
R463	ERG3SJ470	47	⚠	1
R464	ERDS2TJ103	10K	⚠	1
R465	ERDS2TJ103	10K	⚠	1
R466	ERDS1TJ181	180	⚠	1
R467	ERDS2TJ391	390	⚠	1
R468	ERDS2TJ123	12K	⚠	1
R469	ERG2SJ683	68K	⚠	1
R480	ERDS2TJ273	27K	⚠	1
		(CONNECTORS)		
CN401	PQJP3D97Z	CONNECTOR, 3P	⚠	1
CN402	PQJP11D70Z	CONNECTOR, 11P		1
CN403	Not Used			
CN404	PQJP10G74Z	CONNECTOR, 10P		1